EDUCATIONAL REVIEW

OCTOBER, 1894

I

THE UNITY OF EDUCATIONAL REFORM[1]

The Report of the Committee of Ten has now been in the hands of the teachers of the country for about six months, so that there has been time to formulate and publish some criticism and objections. I propose to comment in this paper on one criticism or objection which, in various forms and by several different persons, has been brought before the educational public. Whenever I speak of the Report, I intend to include the reports of the Conferences as well as the proper Report of the Committee of Ten; for the chief value of the total report lies in the Conference reports.

The objection to the Report which I shall discuss is contained in the question, "What do college men know about schools?" Those who urge this objection say in substance—"More than half the members of the Conferences were at the moment in the service of colleges and universities, and the same was true of the Committee of Ten. The wise management of schools for children of from six to eighteen years of age is a different business from the wise management of colleges and universities. Not only is the age of the pupils different, but their mode of life and the discipline they need are also different. The mental capacity of young children is low compared with that of college students; their wills are weaker, and their moral qualities undeveloped. How can men who teach and govern young people from eighteen to twenty-four years of age know anything about schools for children? Let

[1] A paper read before the American Institute of Instruction at Bethlehem, N. H., July 11, 1894.

them attend to the higher education, and not attempt to teach experts in elementary and secondary education how to conduct their very different business. That a man has succeeded in conducting a college or a university makes it altogether probable that his advice will be worthless as to the best mode of conducting a school or a system of schools. We school superintendents and principals have to handle masses of average material; your college and university teacher has only a small number of exceptional individuals to deal with."

To meet this objection I wish to affirm and illustrate the proposition that the chief principles and objects of modern educational reform are quite the same from beginning to end of that long course of education which extends from the fifth or sixth to the twenty-fifth or twenty-sixth year of life. The phrase educational construction would perhaps be better than the phrase educational reform; for in our day and country we are really constructing all the methods of universal democratic education. We seldom realize how very recent and novel an undertaking this educational construction is. As a force in the world universal education does not go behind this century in any land. It does not go back more than twenty years in such a civilized country as France. It dates from 1871 in England. Plato maintained that the producing or industrial classes needed no education; and it is hardly more than a hundred years since this Platonic doctrine began to be seriously questioned by social philosophers. It is not true yet that education is universal even in our own land; and in all lands educational practice lags far behind educational theory. In this process of educational construction, so new, so strange, so hopeful, I believe that the chief principles and objects are the same from the kindergarten through the university; and therefore I maintain that school teachers ought to understand and sympathize with university reform and progress; and that college and university teachers ought to comprehend and aid school reform and progress. Let us review together those chief principles and objects, although in so doing I shall necessarily repeat some things I have often said before.

I The first of these objects is the promotion of individual instruction—that is, the addressing of instruction to the individual pupil rather than to groups or classes. At present the kindergarten and the university best illustrate the progress of this reform; but the beneficent tendency is clearly exhibited all along the line. In elementary and secondary schools the effort is constantly made to diminish the number of pupils assigned to one teacher; and in some fortunate secondary schools the proportion of pupils to teachers has already been intentionally made as favorable as it has incidentally become in the most prosperous universities which have been adding rapidly to their advanced courses of instruction. In urban school systems the number of pupils assigned to a teacher is recognized as the fundamental fact which determines better than any other single fact the quality and rank of each system among those with which it may be properly compared. Into the curricula of schools and colleges alike certain new matters have of late years been introduced, for teaching which the older methods of instruction—namely, the lecture and the recitation—proved to be inadequate, or even totally inapplicable. These new matters are chiefly object lessons in color and form, drawing and modeling, natural sciences like botany, zoölogy, chemistry, physics, mineralogy, and geology, and various kinds of manual training. In school and college alike the really effective teaching in all these subjects is that which is addressed to each individual pupil. All laboratory and machine-shop teaching has this character, no matter what the subject. The old-fashioned method of teaching science by means of illustrated books and demonstrative lectures has been superseded from the kindergarten through the university by the laboratory method, in which each pupil, no matter whether he be three years old or twenty-three, works with his own hands and is taught to use his own senses. General explanations and directions may be given a class; but in the laboratory each individual's work must be separately supervised and criticised. There is nothing more individual than a laboratory notebook. In all laboratory and machine-shop

work, the rates of progress of different pupils vary widely. Quicker eyes, defter hands, greater zeal, and better judgment will tell, and the teacher has every opportunity to discover the natural gifts or defects of the different pupils and to develop the peculiar capacity of each mind. All the artistic subjects, as well as all the scientific, require individual instruction. In drawing, painting, and modeling the instruction is, of necessity, individualized. It is one of the best results of the introduction of manual training that each pupil must receive individual criticism and guidance. The instructor is compelled to deal with each pupil by himself, and to carry each forward at his own rate of speed. In short, manual training breaks up class-room routine, and introduces diversity of achievement in place of uniform attainment. I say that this principle applies all the way from the kindergarten to the professional school. It applies conspicuously in medical instruction; and within twenty-five years it has been there applied so successfully, that it is no exaggeration to say that within this period the whole method of teaching medicine has been revolutionized throughout the United States. It is now universally recognized that it is impossible to teach medicine and surgery to large numbers of persons simultaneously by general descriptions, or by the use of diagrams, pictures, or lantern slides which many can see at once. Not that illustrated lectures and general demonstrations are wholly useless; but they hold only a subordinate place. The really important thing is individual personal instruction under circumstances which permit the student to see and touch for himself, and then to make his own record, and draw his own inferences. Finally, the highest type of university teaching—the so-called seminary or conference method—is emphatically individual instruction.

It is hard to say at what stage of education from the primary grade to the final university grade the individualization of instruction is most important. The truth is that the principle applies with equal force all along the line. For the university president, the school superintendent, and the kindergartner alike it should be the steady aim, and the central

principle of educational policy; and whoever understands the principle and its applications at any one grade understands them for all grades.

II Secondly, let me ask your attention to six essential constituents of all worthy education—constituents which in my opinion make part of the educational process from first to last, in every year and at every stage—and let me ask you particularly to consider which of these constituents belong to schools but not to colleges, or to colleges but not to schools.

The first constituent is the careful training of the organs of sense, through which we get incessant and infinitely diversified communications with the external world, including in that phrase the whole inanimate and animate creation with all human monuments and records. Through the gate of accurate observation come all kinds of knowledge and experience. The little child must learn to see with precision the forms of letters, to hear exactly the sounds of words and phrases, and by touch to discriminate between wet and dry, hot and cold, smooth and rough. The organs of sense are not for scientific uses chiefly; all ordinary knowledge for practical purposes comes through them,. and language, too, with all which language implies and renders possible. Then comes practice in grouping and comparing different sensations or contacts, and in drawing inferences from such comparisons—practice which is indispensable in every field of knowledge. Next comes training in making a record of the observation, the comparison, or the grouping. This record may obviously be made either in the memory or in written form; but practice in making accurate records there must be in all effective education. Fourthly comes training of the memory, or in other words, practice in holding in the mind the records of observations, groupings, and comparisons. Fifthly comes training in the power of expression—in clear, concise exposition, and in argument or the logical setting forth of a process of reasoning. This training in the logical development of a reasoning process is almost the consummation of education; but there is one other essential constituent, namely, the steady inculcation of

those supreme ideals through which the human race is uplifted and ennobled—the ideas of beauty, honor, duty, and love.

These six I believe to be essential constituents of education in the highest sense. We must learn to see straight and clear; to compare and infer; to make an accurate record; to remember; to express our thought with precision; and to hold fast lofty ideals. The processes I have described as separate often take place in the mind so rapidly that they, or some of them, seem to us simultaneous. Thus, intelligent conversation involves observation, comparison, record, memory, and expression, all in a flash. But if these be constituents of education, is not education a continuous process of one nature from beginning to end? Are not these six constituents to be simultaneously and continuously developed from earliest childhood to maturity? The child of five years should begin to think clearly and justly, and he should begin to know what love and duty mean; and the mature man of twenty-five should still be training his powers of observing, comparing, recording, and expressing. The aims and the fundamental methods at all stages of education should therefore be essentially the same; because the essential constituents of education are the same at all stages. The grammar-school pupil is trying to do the same kinds of things which the high-school pupil is trying to do, though of course with less developed powers. The high-school pupil has the same intellectual needs which the university student feels. The development of a mind may be compared with the development of a plant—it proceeds simultaneously and continuously through all its parts without break or convulsion. If at any stage there seem to be a sudden leafing or blooming, the suddenness is only apparent. Leaf and bloom had long been prepared—both were enfolded in last year's bud. From first to last, it is the teacher's most important function to make the pupil think accurately, and express his thought with precision and force; and in this respect the function of the primary-school teacher is not different in essence from that of the teacher of law, medicine, theology, or engineering.

III A considerable change in the methods of education has been determined during the past twenty-five years by the general recognition of the principle that effective power in action is the true end of education, rather than the storing-up of information, or the cultivation of faculties which are mainly receptive, discriminating, or critical. We are no longer content in either school or college with imparting a variety of useful and ornamental information, or with cultivating æsthetic taste, or critical faculty in literature or art. We are not content with simply increasing our pupils' capacity for intellectual or sentimental enjoyment. All these good things we seek, to be sure; but they are no longer our main ends. The main object of education, nowadays, is to give the pupil the power of doing himself an endless variety of things which, uneducated, he could not do. An education which does not produce in the pupil the power of applying theory, or putting acquisitions into practice, and of personally using for productive ends his disciplined faculties, is an education which has missed its main end. One humble illustration of the influence of this principle is the wide adoption of reading foreign languages at sight as a suitable test of fitness for admission to colleges. Another similar illustration is the use of question-papers in geometry containing a large proportion of problems which do not appear in explicit form in the ordinary manuals, but which can be answered or solved by making a simple application of the geometrical principles developed in those manuals. These are tests of acquired power. We think it reasonable to test a student of chemistry by giving him an unknown substance to analyze. Can he find out what it is, and prove his discovery correct? In other words, can he apply his information and knowledge of methods to a problem which is to him wholly unknown? Has he acquired not only information, but power? The whole field of natural science is available for that kind of training is power-getting, which it is the main object of modern education to supply. It is not what the student of medicine has heard about, or seen others do, but what he can do himself with his own eyes and hands and with his own powers of com-

paring and judging, which will give him pre-eminence as a physician or surgeon. To give personal power in action under responsibility is the prime object of all medical education. This same principle, however, applies just as well in the primary school as in the professional school. Education should be power-getting all the time from the beginning to the end of its course. Its fundamental purpose is to produce a mental and moral fiber which can carry weight, bear strain, and endure the hardest kinds of labor.

IV The next educational principle which I believe to apply to two-thirds of the entire educational course between five and twenty-five years of age is the principle of the selection or election of studies. In the first three or four years of a child's education—say from five or six years of age to nine years—there are not so many possible subjects of equal value and necessity but that the child may pursue them all to some adequate extent; but by the ninth or tenth year of age more subjects will claim the child's attention than he will have time for, and thereupon arises the necessity for a selection of studies. As the child advances from the elementary school to the secondary school, and from the secondary school to the college, the number and variety of subjects from which to choose will rapidly increase, until in the department of arts and sciences of the university he will find that he cannot attempt to follow the twentieth part of the instruction offered him. Tables I and II in the Report of the Committee of Ten demonstrate abundantly the absolute necessity for selection or election of studies in secondary schools, and even in the later years of the elementary course. Who shall make the selection—is really the only practical question. The moment we adopt the maxim that no subject shall be attacked at all, unless it is to be pursued far enough to get from it the training it is fit to supply, we make the election or selection of studies a necessity. This principle has now been adopted by all colleges and universities worthy of the name, and by the greater part of the leading high schools, academies, endowed schools, and private schools; but in these secondary institu-

tions the principle is commonly applied rather to groups of subjects than to single subjects. The result is an imperfect application of the elective principle, but it is much better than any single uniform prescribed course. Finally, this principle has within a few years penetrated the grades, or the grammar schools, and has earned its way to a frank recognition at that stage of education.

It is no objection to the principle, and it establishes no significant distinction between college experience and school experience, that there must obviously be limitations of diversity in studies during school life. School programmes should always contain fair representations of the four main divisions of knowledge—language, history, natural science, and mathematics; but this does not mean that every child up to fourteen must study the same things in the same proportions and to the same extent. On the contrary, representation of the different kinds of knowledge and mental action having been secured, the utmost possible provision should be made for the different tastes, capacities, and rates of progress of different children. Moreover, a main object in securing this representation of language, history, science, and mathematics in the earlier years of education is to give the teacher opportunity to discover each pupil's capacities and powers. There is, however, no ground of distinction between school teaching and university teaching in respect to these special limitations; for if we turn to the very last stage of education—professional training—we find there a serious limitation on the principle of election, a limitation imposed by the necessity of giving all young lawyers, physicians, ministers, teachers, engineers, biologists, or chemists the considerable quantity of strictly professional information and practice which every future member of these several professions absolutely needs. Again, for the same reason, scientific or technological schools must for the present use a group system rather than a free election of studies. They must adjust their present instruction to current professional needs. The freest field for the principle of selection or election of studies lies between the ages of thirteen

and twenty-three—including five or six years of school life and all of college life. School men and college men alike should rejoice in this free field.

V The next rule of educational reform, which applies at every stage of the long course of education that civilized society provides, relates to what is called discipline. Down to times quite within my memory the method of discipline both in school and college was extremely simple, for it relied chiefly, first, on a highly stimulated emulation, and secondly, on the fear of penalty. It had not been clearly perceived that an immediate, incessant, and intense emulation does not tend to develop independent strength of will and character good in either solitude or society, and that fear of penalty should be the last resort in education. It is now an accepted doctrine that the discipline of childhood should not be so different from that of adolescence as to cause at any point of the way a full stop and a fresh start. A method of discipline which must be inevitably abandoned as the child grows up was not the most expedient method at the earlier age; for the reason that in education the development and training of motives should be consecutive and progressive, not broken and disjointed. Herein lies one of the objections to whipping, or other violence to the body, and to all methods which rely on the fear of pain or of artificial penalties or deprivations. There comes an age when these methods are no longer applicable. At eighteen there are no methods of discipline analogous to whipping, or to the deprivation of butter, sweetmeats, supper, or recreation, or to the imposition of verses to learn, or of pages of Latin or English to copy. If this sort of motive has been relied on up to eighteen, there will then be need of a whole new set of motives. For these reasons among others the judicious teacher, like the judicious parent, will not rely in childhood, if he can help it, on a set of motives which he knows must inevitably cease to operate long before the period of education is ended. By preference, permanent motives should be relied on from beginning to end of education, and this for the simple reason that the formation of

habits is a great part of education, and in that formation of habits is inextricably involved the play of those recurrent emotions, sentiments, and passions which lead to habitual volitions. Among the permanent motives which act all through life are prudence, caution, emulation, love of approbation, and particularly the approbation of persons respected or beloved, shame, pride, self-respect, pleasure in discovery, activity, or achievement, delight in beauty, strength, grace, and grandeur, and the love of power and of possessions as giving power. Any of these motives may be over-developed; but in moderation they are all good, and they are available from infancy to old age.

From the primary school through the university the same motives should always be in play for the determination of the will and the regulation of conduct. Naturally they will grow stronger and stronger as the whole nature of the child expands and his habits become more and more firmly fixed; and for this reason these same enduring motives should be continuously relied on. Obviously, then, there is no difference between men who manage colleges and men who manage schools in relation to this important principle of educational reform. The methods of both should be identical; and the college man, or the school man, who does not guide and govern through the reason of his pupils, through their natural interest in observation, experiment, comparison, and argument, and through the permanent motives which lead to right conduct, is not in sympathy with one of the most humane and hopeful educational reforms of the present generation. All teachers who deserve the name now recognize that self-control is the ultimate moral object of training in youth—a self-control independent of temporary artificial restraints, exclusions, or pressures, as also of the physical presence of a dominating person. To cultivate in the young this self-control should be the steady object of parents and teachers all the way from babyhood to full maturity.

VI The next principle of educational construction to which I invite your attention is again one which applies throughout

the length and breadth of education. It is the specialization of teaching. One might easily imagine that this principle had already been sufficiently applied in universities, and only needed to be applied hereafter in schools; but the fact is that the specialization of instruction is still going on in universities, and needs a much greater extension in American colleges and professional schools than it has yet received. Dr. Oliver Wendell Holmes was professor of anatomy and physiology in Harvard University down to 1871; and he really taught, in addition to these two immense subjects, portions of histology and pathology. He described himself as occupying, not a chair, but a settee. The professorship in Harvard University which was successively occupied by George Ticknor, Henry Wadsworth Longfellow, and James Russell Lowell is the Smith Professorship of the French and Spanish Languages and Literatures. In many American colleges we find to-day the same professor teaching logic, metaphysics, ethics, and political economy. Indeed this was the case in Harvard College down to 1871, except that moral philosophy and Christian ethics were detached from the Alford Professorship, from and after 1860. The specialization of instruction is by no means completed in American colleges. It is better advanced now in American secondary schools than it was in the American colleges eighty years ago; and it is just beginning to be developed in the American grammar schools, or grades, where it is generally spoken of as departmental organization. From the extension of this principle in American schools much is to be hoped within the next ten years, particularly for the teacher. To teach one subject to pupils at different stages, adapting the instruction to their different ages and capacities, watching their development, and leading them on with due regard to individual differences through four or five years of continuous progress, gives an inexhaustible interest to the teacher's function. To master one subject so as to be able to give both elementary and advanced instruction in it, is for the teacher himself a deep source of intellectual enthusiasm and growth. Real scholarship becomes possible for him, and also

a progressive intellectual expansion through life; for only progressive scholars can maintain for many years the mastery of even a single subject. Does it seem to you an unreasonable expectation that teachers in the grades, or grammar schools, should possess this mastery of single subjects? Careful observation seems to me to give assurance that exceptional teachers, both men and women, already possess this mastery; and that what remains to be done is to make the exceptions the rule. Toward effecting this great improvement two important measures are the elevation of normal schools and the creation, or strengthening, of educational departments in colleges and universities. At any rate, there can be no doubt that this specialization of instruction is a common need from beginning to end of any national system of instruction; and that it is capable of adding indefinitely to the dignity, pleasure, and serviceableness of the teacher's life. Obviously this common need and aspiration should unite rather than divide the various grades of education, and should induce co-operation rather than cause dissension.

VII There is a fundamental policy in regard to educational organization which should unite in its support all teachers, whether in schools or universities—the policy, namely, that administrative officers in educational organizations should be experts, and not amateurs or emigrants from other professions, and that teachers should have large advisory functions in the administration of both schools and universities. The American colleges and universities are better organized in this respect than the American schools. More and more, the heads of the institutions of higher education are men of experience in education itself, or in other administrative services. The presidencies of colleges are no longer filled, as a rule, by withdrawing from the ministry men well advanced in life and without experience in teaching. The deans of the rather distinct schools which compose universities are usually men of experience in their several departments; and much power is exercised by the faculties of colleges and universities, these faculties being always bodies composed of

the more permanent teachers. Moreover, in large colleges and universities all the teachers of a given subject are often organized into a body called a division or department, with a chairman chosen from among them as a judicious man and a distinguished teacher. These or similar dispositions need to be adopted throughout the large urban school systems. Superintendents should be educational experts of proved capacity. Their assistants, whether called supervisors, inspectors, or assistant superintendents, should be organized as a council or faculty; and all the teachers of a single system should be associated together in such a way that by their representatives they can bring their opinions to bear on the superintendent and his council, or in the last resort on the committee or board which has the supreme control of the system. The teachers of the same subject should also be organized for purposes of mutual consultation and support; and at their head should be placed the best teacher of the subject in the whole system, that his influence may be felt throughout the system in the teaching of that subject. Moreover, the colleges and the schools need to be assimilated in respect to the tenure of office of teachers. After suitable probationary periods, the tenure of office for every teacher should be during good behavior and efficiency.

In general, the differences of organization between colleges on the one hand and school systems on the other are steadily growing slighter. The endowed schools and academies already have an organization which closely resembles that of the colleges; and all the recent changes in the mode of conducting urban school systems tend in the good direction I have described. There is in some quarters a disposition to dwell upon the size of public-school systems as compared with the size of colleges and universities; but size is no measure of complexity. A university is indefinitely more complex than the largest city school system, and the technical methods of university management are more various and intricate than the technical methods of any school system. Independently of all questions of size or mass, however, administrative reform is

taking the same directions in both colleges and schools—first, toward expert control under constitutional limitations; secondly, toward stable tenures of office, and, thirdly, toward larger official influence for teachers.

Recalling now the main heads which have been treated, namely, the individualization of instruction, the six essential constituents of education, power in action as the true end of education, the selection or election of studies, the appeal to permanent instead of temporary motives for controlling conduct, the specialization of teaching, and the right principles of educational organization—do we not see that the principles and methods of educational reform and construction have a common interest for all teachers, whether connected with colleges, secondary schools, or elementary schools, and shall we not agree that there is something unphilosophical in the attempt to prejudice teachers of whatever grade against the recommendations of the Committee of Ten and of the Conferences that committee organized, on the grounds that a small majority of the persons concerned in making them were connected with colleges, and that the opinions of college or university officers about school matters are of little value?

The plain fact is, that there is community of interests and aims among teachers throughout all the grades into which the course of education is at present artificially divided. The identity of the principles which govern reforms and improvements at every stage is strikingly illustrated by the simultaneousness and similarity of the advances now being everywhere made. Elementary schools, secondary schools, and colleges all feel similar impulses, and are all making similar modifications of their former methods. I can testify from personal observation that some of the administrative improvements lately made in universities resemble strikingly improvements made at the other extremity—namely, in the kindergartens. It is very noticeable that even some of the mechanical or business changes made in school administration —changes which were not supposed to have any bearing on

the philosophy of education, or on new methods of teaching—have facilitated true educational reform. Thus, the method of transporting children at public expense to central grammar schools in a rural town, or to high schools in large towns and cities, has distinctly facilitated the introduction of departmental and elective instruction. Again, the purchase and free issue of books for pupils by towns and cities has facilitated the use of good literature instead of readers—an important contribution toward improving the teaching of the native language and literature by increasing interest in them and love for them. In like manner, the institution of departmental libraries—that is, of small working collections of books on the same general subject, deposited in a place by themselves, and always accessible to students of that subject, has made possible great improvements in the instruction of Harvard College and many other colleges.

The Committee of Ten declare in their Report "that it is impossible to make a satisfactory secondary school programme, limited to a period of four years, and founded on the present elementary school subjects and methods." In view of the rapid changes now going on in elementary school subjects and methods, this declaration amounts to saying that the Committee's work on the four secondary school programmes they recommend has only a temporary interest. Tables I, II, and III of their Report have some permanent value; but Table IV, which contains the four programmes called Classical, Latin-Scientific, Modern Languages, and English, and which cost the Committee a great deal of labor, will surely be rendered useless by improvements in the elementary and secondary schools which may easily be accomplished within ten years. Some firm, lasting principles are embodied in Table IV; but the programmes themselves are only temporary trestlework.

If I were asked to mention the best part of the contribution which the Committee of Ten have made to the progress of American education, I should say that their general method of work was the best part—the method of investigation and dis-

cussion by subject of instruction—teachers and experts from all sorts of colleges and universities and from all sorts of schools, public, private, and endowed, taking part in both investigation and discussion. The Committee's method of work emphasizes the community of interest at all grades, and the fact that experience at every grade is valuable for suggestion and counsel at all other grades. To my thinking, the present artificial and arbitrary distinctions between elementary schools and secondary schools, or between grammar schools and high schools, have no philosophical foundation, and are likely to be profoundly modified, if they do not altogether pass away. In the same sense, I believe that the formal distinction between college work and university work is likely to disappear, although the distinction between liberal education and technical or professional education is sure to endure. I have never yet seen in any college or university a method of instruction which was too good for an elementary or a secondary school. The alert, inspiring, winning, commanding teacher is just the same rare and admirable person in school and in college. There is to be sure one important element of university work which schools and colleges cannot participate in—namely, the element of original investigation—but although this element is of high importance, and qualifies, or flavors, a considerable part of university work, there remains in all large universities, and particularly in those which make much of professional training, an immense body of purely disciplinary work, all of which is, or should be, conducted on principles and by methods which apply throughout the whole course of education. When it is a question how best to teach a given subject, the chances are that college or scientific school teachers of that subject can help school teachers, and that school teachers can help college teachers. Moreover, it is important that each should know what the other does. I have observed, too, that, even when neither party is ready to venture on affirmative counsel, each is pretty well prepared to tell the other what not to do. Such negative counsel is often very useful.

On the whole, the greatest promise of usefulness which I

see in the Report of the Committee of Ten lies in its obvious tendency to promote co-operation among school and college teachers and all other persons intelligently interested in education, for the advancement of well-marked and comprehensive educational reforms.

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The history of the formation and work of the Committee of Ten is described in the issues of the EDUCATIONAL REVIEW for October, 1891, September and December, 1892, January, February, June, November, and December, 1893.

Previous articles discussing the report are by Dr. W. T. Harris (January, 1894), President Charles W. Eliot (February, 1894), President Charles De Garmo and Principal C. F. P. Bancroft (March, 1894), President John E. Bradley and Mr. John S. Clark (April, 1894), Colonel Francis W. Parker (May, 1894), and Dr. Julius Sachs (June, 1894).

II

ILLITERACY IN THE UNITED STATES

Three years ago it was announced in an article[1] showing the results obtained from school reports by the Eleventh Census, that the inquiries regarding education were along two distinct lines. The first of these was the work of enumerators gathering from the people themselves the number, age, sex, race, maternal nativity and time occupied in schools of teachers and pupils; the enumerators also gathering the particulars regarding illiterates as far as practicable, with their occupations. The second of these was the gathering of reports direct from the schools.

When that article was contributed to the EDUCATIONAL REVIEW the exact results of inquiries of school officials were somewhat anticipated, although the gross figures had already been given to the public. It was not supposed that so long an interval would be necessary before the conditions, as developed by inquiry in the homes of the people, would be shown. The final report upon education as based upon the reports of schools has now been before the public for some time, and the contents sustain the general statements that appeared in the EDUCATIONAL REVIEW.

It was not until this month of July, 1894, that the statistics of illiteracy were brought together in such a form as to make them available for the general public. Even now, there remains a considerable amount of work to be done in bringing together the statements to show occupations, as teachers and scholars, and the minor differences of nativity and the occupations among the illiterates. If one will compute the shortest time required for asking a question and tabulating its answer, as applied individually to nearly sixty-five million people, it will be evident that the briefest question possible

[1] EDUCATIONAL REVIEW, II: 238

will require an extended time for its results to be consolidated. On the schedules containing the statistics of occupations and of illiteracy are many questions each of which increases greatly the time needed for gathering the results into intelligible summaries.

Congress recently directed the publication of an Abstract of the Eleventh Census to contain 250 pages octavo, within which should be shown the leading facts obtained by the Census. The work was accomplished within the time set by the law, and the limits of the book exclusive of table of contents and index, exactly fill the legal requirements. The Abstract contains eleven pages of the tables published in the final report on education, using no geographical unit smaller than the State. In addition there are six pages upon illiteracy for States, and their appearance in this volume is their first publication. These tables show the total population above ten years of age, the native white population, the foreign white population, and the colored population, including negroes, Chinese and Japanese, and civilized Indians: the latter two of which are not sufficiently numerous in the country at large to affect percentages, if we consider them for the moment with the negroes, and the division of illiterates by sex. Alongside of the figures for 1890 are given those for 1880, so that one may contrast for himself the showing made in the two census years. No account is taken in this connection of children under ten years of age. The illiterates as given in the Abstract correspond to those unable to write as reported in the Tenth Census, being made up of those who can read but not write plus those who can neither read nor write. It would be too much of a tax upon the pages of this magazine to reproduce the tables here. The condensed summary given in Table I, indicates the results for the country as a whole.

This table indicates that, so far as ability to write is concerned, there is a wholesome advance in the conditions of the population. The student of social conditions will not forget that ability to write may not secure the virtues found in some people who do not write, and that so far as a revelation of

TABLE No. 1

POPULATION, 10 YEARS OF AGE AND OVER, CLASSIFIED BY GENERAL NATIVITY AND COLOR, AND SHOWING THE ILLITERATES, 1880, 1890

Classification	*1890*	*1880*
Population, 10 years of age and over	47,413,559	36,761,607
Illiterates	6,324,702	6,239,958
Per cent. of illiterates	13.3	17.0
White population, 10 years of age and over	41,931,074	32,160,400
Illiterates	3,212,574	3,019,080
Per cent. of illiterates	7.7	9.4
Native white population, 10 years of age and over	33,144,187	25,785,789
Illiterates	2,065,003	2,255,460
Per cent. of illiterates	6.2	8.7
Foreign white population, 10 years of age and over	8,786,887	6,374,611
Illiterates	1,147,571	763,620
Per cent. of illiterates	13.1	12.0
Colored population (*a*), 10 years of age and over	5,482,485	4,601,207
Illiterates	3,112,128	3,220,878
Per cent. of illiterates	56.8	70.0

(*a*) Persons of negro descent, Chinese, Japanese, and civilized Indians.

character is concerned, the statistics of illiteracy can have but a superficial value. It will be seen that the percentage of illiteracy for each group of the population as above mentioned has decreased except that for the foreign white population. The increase in this group is small and the number of persons involved is relatively small, so that the effect does not prevent a great total gain. The greatest relative gain has been made by the colored population, and this is explainable upon two lines: the negro children are more and more coming within the influence of instruction in books and the confirmed mature illiterates have diminished by the ordinary mortality. If we turn to the foreign element we shall find reason to analyze it still further than is immediately practicable as it is evident that two very unlike groups of immigrants come into the country; one group brings thrift and industry, and more or less of worldly means to add to the resources of the nation; the other is ignorant, with more brutal instincts and with scanty possessions, imbued with prejudices corresponding to the narrowness of its information, constituting a dangerous element.

The relations of the percentages of illiteracy in the country by sex stood in 1880 as 15.8 for males and 18.2 for females. In 1890 the per cent. for males had diminished to 12.4 and for females to 14.4, the improvement indicated by ability to write having been carried quite evenly by the two sexes. The difference is not larger than may be ascribed to the greater opportunity that comes to the unlettered boy in isolated frontier and rural neighborhoods or in the pressure of poverty by the contact he has with others when danger or necessity restrict the movements of his sister. The negro who goes to the market town with his bale of cotton, or the cowboy who helps take the herd to the railway station, learns as a matter of course to distinguish the names on the warehouses, or to select by their lettering the cars that belong to separate roads.

President Francis A. Walker, in an address to the American Historical Society some years ago, indicated that we were on the verge of a condition of migration in which the movement would be back and forth between Europe and the United States according as depression or activity prevailed on one side or the other. Fares were diminishing, so that crossing the Atlantic was as easy as a moderate journey within the country. The condition then recognized as near, is now here. One may cross the Atlantic for less than ten dollars, and it is hardly more difficult to follow prospects of betterment from New York to Liverpool, or the reverse, than to go from New York to Chicago or from St. Paul to Buffalo. This condition has a close relation to some of the facts given in the Abstract. In this immediate connection the student of social conditions must recognize the great force of social heredity as well as of individual heredity.

Taking the line of the Ohio River as a general boundary, an examination of the population tables of the Abstract will be full of suggestions. We all know that, with minor inlets, the great flood of foreign immigration has been poured into the country through the port of New York and we know something of its distribution thence over the country, as we think,

and yet very many people forget that but a small fraction of this foreign element has gone south of Pennsylvania. From Delaware to Texas we have mainly a native population, the white portion tracing its descent almost wholly from English sources, cherishing the English language and perpetuating Anglo-Saxon ideas. The negroes are strong in their local attachments and pattern their improvement upon the Anglo-Saxon models around them.

It is quite worth while for every thoughtful teacher or loyal citizen to study the facts brought out as to our population by the Census; and the far-reaching social, commercial, and industrial disturbances of the present season give new interest to the study.

It has been found that of 7351 persons in the United States held for homicide, 61.73 per cent. can read and write, and that, taking only the North Atlantic and North Central divisions, or the portion of the country north of the line of the Ohio River and east of the 104th meridian west longitude, 83.97 per cent. can read and write. If such percentages appear in regard to a crime popularly supposed to grow out of brutal motives, what may we expect when we include crimes requiring business experience and a degree of scholarly training for their perpetration?

Is it the short-sighted illiterate or the crafty, educated man of evil design who is more dangerous to society? Is the immigrant or the native demagogue profiting by prejudices most pernicious? Is the lately unlettered negro or the recent importation of degradation from Europe most promising for peaceful domesticity? What regions are profiting by the quality of immigration, and what regions are receiving a hurtful element?

These are but indications of the questions that crowd upon us. They cannot all be answered from the Abstract of the Eleventh Census, nor indeed from the final reports.

Table No. 2 has been made by selecting certain States to show the varying influences of foreigner and negro upon conditions in different parts of the country.

TABLE No. 2

PER CENT. OF ILLITERACY, NATIVE BORN, FOREIGN BORN, WHITE AND COLORED POPULATION IN SELECTED STATES—1890

States	*Native born*	*Foreign born*	*White*	*Colored (a)*	*Per cent. of Illiterates*
Massachusetts	1,581,806	657,137	2,215,373	22,144	6.2
New York	4,426,803	1,571,050	5,923,952	70,092	5.5
Pennsylvania	4,412,294	845,720	5,148,257	107,596	6.8
Minnesota	834,470	467,356	1,296,159	3,683	6.0
Iowa	1,587,827	324,069	1,901,086	10,685	3.6
Kansas	1,279,258	147,838	1,376,553	49,710	4.0
Alabama	1,498,240	14,777	833,718	678,489	41.0
Georgia	1,825,216	12,137	978,357	858,815	39.8
South Carolina	1,144,879	6,270	462,008	688,934	45.0
Texas	2,082,567	152,956	1,745,935	488,171	19.7

(*a*) Includes all persons of negro descent.

Table 2 is intended only to suggest what a table containing all the States would show. We are accustomed, in the self-complacent study of our own nation, to consider the native-born Anglo-Saxon population as the satisfactory standard to which assimilation is to be made. It will be convenient for the sake of brevity to touch lightly here any danger that lies within this standard population and confine ourselves for the moment to the peculiar relation of this native-born Anglo-Saxon element to the two great bodies of population popularly embodying the elements of danger to our institutions, namely, the negro and the immigrant.

A flow of immigration has come down upon New England out of French Canada that has produced a marked modification in the local conditions. The newly arrived people are industrious, but in language, education, and religious association they are not of the old New England type. They add considerably to the ratio of foreign-born population in the Northeastern States.

The northwest of the Atlantic slope along the head waters of the Mississippi has received a great foreign population, but

the Scandinavians and the Germans who have gone upon the prairies and into the forests come from the countries to which the Anglo-Saxon must trace his remote ancestry and the inauguration of many of his most cherished customs and institutions. A difference of language and of church connection ought not long to keep people apart when their industry, their integrity, and their general purpose are along kindred lines.

The South has the negro who speaks English, is of like religious connection with his Anglo-Saxon neighbor, but has inherited a tropical style of energy that is favored by the climate in which he now is.

The bearing of these general conditions is indicated when we see in Table 2 that New York of the northeast, Minnesota, Kansas, and Iowa of the northwest Mississippi valley have a smaller ratio of illiteracy than Massachusetts.

In the two groups selected from Northern States the colored element is insignificant. In the group selected from Southern States we see a high rate of illiteracy, a low ratio of foreign population and a high ratio of persons of negro descent. We must not forget the indications of a rapid decline in the ratio of illiteracy here.

Two States, probably considered by most persons very much unlike, have very much in common. Can it be that the domination of the Anglo-Saxon element in each, with its earnest independence of opinion and discussion, has developed so many kindred incidents? Kansas has the smallest ratio of foreign population of the Northern States named in the table and the largest ratio of negroes, even then insignificant in its general relations. South Carolina has the smallest foreign element of all, but a large negro element.

The abstract does not give geographical units less than States for most purposes, but it gives the population of cities of over twenty-five thousand inhabitants classed as native white, foreign white, and colored.

The problem of city life as compared with rural life is assuming dominant character in all civilization, and some

phases of the condition of cities of the United States are suggested in Table No. 3 below.

TABLE No. 3

POPULATION DIVIDED AS NATIVE AND FOREIGN, AND WHITE AND COLORED, FOR SELECTED CITIES—1890

Cities	*Native*	*Foreign*	*White*	*Colored* (*a*)
Richmond, Va.	77,915	3,473	49,034	32,354
Norfolk, Va.	33,744	1,127	18,617	16,254
Houston, Tex.	24,442	3,115	17,178	10,379
Washington, D. C.	211,622	18,770	154,695	75,697
Augusta, Ga.	32,092	1,208	17,395	15,905
Savannah, Ga.	39,781	3,408	20,211	22,978
New York, N. Y.	875,358	639,943	1,489,627	25,674
San Francisco, Cal.	172,186	126,811	270,696	28,301
Fall River, Mass.	36,664	37,734	74,189	209
Duluth, Minn.	16,893	16,222	32,864	251
Holyoke, Mass.	18,569	17,068	35,606	31
Chicago, Ill.	649,184	450,666	1,084,998	14,852
Lawrence, Mass.	24,136	20,518	44,529	125

(*a*) Persons of negro descent, Chinese, Japanese, and civilized Indians.

Table 3, like Table 2, is but for suggestion of what is to be learned by a study of like facts for the whole country.

The Southern cities have the English-speaking negro as the element to assimilate to the Anglo-Saxon standard. The Northern and Western cities have the foreign element, with its unlike subdivisions, to mold into citizenship. Observe Fall River, Mass., with a predominance of foreign born, Holyoke and Lawrence of the same State in the East and Duluth in the Northwest with their large ratios of foreign population. Contrast the conditions with those of Savannah, Georgia, and Richmond, Va., with their high ratios of colored people. What part of the republic is henceforth to be most desirable for a safe home life?

In the bracing cold of the northern latitudes the pursuit of business is sharp and the schools push arithmetic and the calculations of interest and gain, while in semitropical latitudes a more leisurely plan obtains in education and reading of a general character has had a larger place. In the changes

of the day will this continue or is the ability to make money to dominate? The recent inflation in the price of town lots, perhaps the most influential single item in our present disturbed financial condition, was carried on all over the country with but moderate regard to climatic lines.

It is very desirable to study illiteracy separated by age periods at least so far as to give those between the ages of ten and twenty-one years whom we may hope yet to reach as unconfirmed illiterates and those above twenty-one whom, for the most part, we cannot reach and must consider as confirmed illiterates.

The separation by ages into confirmed and unconfirmed illiterates, and the distribution by occupations, must await further realization of the results by the Census Office.

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III

AIMS AND STATUS OF CHILD-STUDY

Before a man begins to build houses he ought to learn something of the builder's trade. Before a mother attempts to develop the mental and bodily powers of her child, she should know something of the laws of life in the child. Before a professional teacher can enter on his duties with a clear conscience he should have a fair knowledge of the physiology and psychology of child-life. Where can parents, teachers, and all who are interested in education obtain this knowledge? For physiology and bodily hygiene this knowledge exists; to a considerable extent it has been prepared in popular form for convenient use. For psychology the case is different. The facts have not even been collected into systematic form. We hail, however, with enthusiasm the promising and fruitful science of child-study that has developed within the last twenty years. We mean by child-study the observation and measurement of children in their constitutions, functions, and activities. The science includes the study of body and mind: the two cannot be separated except in an artificial manner.

The purposes of child-study are first, psychological; second, statistical; third, personal. The psychological purpose is the fundamental one. If our system of education is ever to be anything more than blundering guesswork, we ought to know just what and how much the average child is able to do at each age. We must know the laws of growth not only of the body but also of the mind. Experiments and measurements should be taken to determine the amount and kind of work for each school grade. For example, tests on memory should be made to determine how the average ability of children increases as they grow older. Tests on fatigue for different kinds of work should be made to let us know how much the

average child or the weakest child can stand at each age. Such mental measurements are important, not only as safeguards for the child himself but also to determine the average mental growth at various periods. They will consequently aid in adjusting the work so that the greater amount falls at an age when the child is in the best condition to bear it and so that the work may be lessened at the times when he needs to reserve his strength for growing in other directions. The various portions of the body and the various mental abilities develop at different times and with different rapidities. It is of fundamental importance to know just when to begin a new kind of study or a heavier kind of bodily exercise.

The statistical purpose is equally important. The psychological purpose is to determine the general laws of growth and function without regard to particular persons and places; the statistical purpose is to gather information as to the condition of children of different nations, in different climates, under different training, etc. European children differ from American children, those of Kentucky from those of New England, city children from country children, those of a badly ventilated school from those of a healthy one. Systematic records of a class compared with similar observations on large numbers of children of the same age show their relative ability.

The personal purpose can be said to be twofold. In the first place we must be able to detect by appropriate observations and measurements the defects that render a child unfit for school-work. Professor Ufer in visiting German schools found a large number of children that were really of unsound mind, or that were in such a condition of mental weakness that a continuance of school-work was sure to bring on some form of insanity. Much of our kindergarten work is fatal to good eyesight; it is an educational crime to allow young children to do perforating or bead-stringing. Systematic tests of the eyes would long ago have made this apparent to everyone and would have saved thousands of cases of myopia. There are in every city hundreds of cases of lopsided growth or stunted chest capacity, hundreds of cases of ruined memories and mis-

directed wills, all of which might have been detected in time by periodic, careful tests and measurements. First and foremost, then, we ought to make sure by child-study that the children are in proper condition for school-work. It is evident that the only security against the development of mental and bodily disease and deformity, and against the maltreatment of children who are really sick or weak while the fact is not known to the teacher or the parent, lies in a periodic system of testing.

Another view of the personal purpose is allied to the previous one, but enters into a much finer question. Instead of asking, "Is the child fit for school-work at all?" we ask, "Is the child fit for the work about to be given him?" Nowadays we promote children because they can remember what they have gone over during the previous term. This is to a great extent justifiable. We are judged in life as much by what we have ready in the memory as by what we are able to do; moreover, a memory of the work of one grade is requisite for that of the next. But we ought also to take into account the child's abilities. Even if he can remember the past work, it does not follow that he is fully able to do the work about to be given him. This is a matter for child-study to solve.

What I have said has shown, I hope, the supreme importance of a study of the mental life of the child. I cannot go into details here, but I will indicate a few of the main lines of work that are being carried on. President Hall proposes to divide the subject into psychogenesis, paidology, and the study of adolescence. I must beg his pardon for objecting to such long Greek names. Plain, old Anglo-Saxon and English words are good enough for anybody, and I fear these frango-maxillary combinations and multitudinous syllabifications will scare more people than they will attract. A mother will gladly assist in "child-study" but would be as afraid of "paidology" as of the scarlet fever. Let us, then, call our whole subject "child-study." A natural division of child-life in the mass occurs when the children are sent to school. For the time before school we can speak of "infant-study," if we wish to

specialize. While in school the children form the mass of "the school-children" as we call them. After leaving school they specialize, and if we do not wish to class them with grown people we call them "youths."

This division corresponds closely to the work that has actually been done in child-study. In the first section, the study of infants, we have the epoch-making work of Preyer. In addition to the excellent German studies of special organs and senses, we have the general accounts of mental development by Darwin and others, and in America especially by Stanley Hall and Miss Shinn.

In regard to school-children there are extensive sets of careful measurements on height, weight, chest capacity, etc., that have been made by Bowditch, Roberts, Peckham, Liharzik, Wretland, Boas, and others. There are also numerous German investigations on the sight and hearing of school-children. But very little has been done in regard to the specially *psychological* development of school-children. We have some work by Hall, Barnes, and others, but no extensive attempt was ever made to introduce the accurate methods of the new (or experimental) psychology into the study of children till the work was taken up last year by Mr. Gilbert, a member of the Yale laboratory.

Work in the third section has been started in America by Dr. Burnham under the direction of President Hall. It has proved of inestimable value in understanding the semi-abnormal, almost pathological, stages of life we all pass through about the age of puberty. The work has proved of very great interest from its religious bearings. No clergyman or priest can properly understand and guide the religious and mystical impulses that arise about this period without a thorough study of the phenomena of adolescence. This fact has been strongly appreciated by the clergymen of the East, a large number of whom are actively engaged in making observations and reporting them to the psychological laboratories.

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IV

GERMAN BOARDING-SCHOOLS

The public day schools of Germany are so peculiarly German, such perfect expressions of the national policy in education, that little is heard of that other class so prominent in England and America—the boarding-school. It exists, nevertheless, and is no less German than the former. There are private institutions, too, of all grades, though but few are recognized as "schools." The higher education of girls is mostly in private hands or supported only in part by the community. In the city of Hamburg, for example, with 11 public and 7 private high schools for boys, there are for girls 5 public and 65 *private* high schools. Of the Berlin high schools 38 are for boys and 32 for girls; all the boys' schools are public, but only 9 of the girls' schools receive any state or city aid.[1]

Church schools—Evangelical, Catholic, and Jewish—are of frequent occurrence and generally have boarding departments. Schools for backward pupils, commercial and technical schools, are usually private or local. But of all the influences which tend to promote private schools for boys the strongest is the privilege of but one-year volunteer service in the army; this may be secured only on the completion of a six-year course of study in a privileged higher school, or upon examination by a governmental board. It is possible for students dropped from the public schools, and for those who, from choice or necessity, would take a shorter course to find instruction in private institutions whose sole aim is to fit for the state examination. As before stated these are not "schools" from the German point of view, but *Fabriken* or *Pressen*—either term being suggestive enough of the methods employed.

The necessity for private venture in the education of girls

[1] *Statistisches Jahrbuch der Höheren Schulen*, 1893–94.

naturally gives rise to many "finishing" schools in which social rank plays a conspicuous rôle. The more pretentious the rank, the more likely is it to be a boarding-school. Many of these schools are under the honorary protection of the various German courts and thereby enjoy decided popularity. Institutions for the education of backward pupils, as those for orphans and others of charitable aim, are naturally home schools. At the head of such institutions stand the renowned Francke'sche Stiftungen in Halle, a group of schools of different grades for both sexes. But the question of home accommodations for high-school pupils, irrespective of sex, class, or condition, is really more serious than in America. In Germany there are above 25,000 post offices, each of which represents a center of population. The pastor, physician, and schoolmaster, not to mention wealthy peasants and government officials, may aspire to give their sons the higher training. But in all Germany there are but 1012 privileged high schools, and the condition is made still clearer when one learns that the 25 largest cities have 208 of these schools. Or to put it in another way, there are in Germany about 2500 cities and towns of over 2000 inhabitants, and these have less than forty per cent. of the total population. The number of boys that must leave home at nine or ten years of age to begin their university preparation is presumably greater than in the United States where the 4500 high schools have a total enrollment not appreciably larger than obtains in the German schools. But because of the uniform excellence of the public schools, and from motives of economy, the average country lad will make his home with a family residing near the school which he enters as a day pupil.

The better grade boarding-schools are recruited mainly from two sources, the nobility and the commercial class. The gymnasial course leading to the university and to the highest posts in the army and civil service will naturally be sought by the former; the aim of the latter is to secure the privilege of but one year of army service and a practical preparation for business life. The cloister schools of St. Afra in

Meissen, Schulpforta and Rossleben are the most famous of the gymnasial boarding-schools. The two former were founded in 1543 and Rossleben is only eleven years younger. St. Afra has an income of 125,000 marks, of which more than one-half is from its original endowment. Besides running expenses this provides free places for 105 scholars and 25 more receive some aid. The Saxon minister of education grants 65 of these scholarships, 11 of which must be given to sons of clergymen; 20 places are at the disposal of certain noble families, and the remaining 45 belong to some 26 cities of Saxony. Only boys of thirteen, or those prepared to enter *Untertertia*, are admitted. That the St. Afra boys are kept busy is evident from the following order of the day: 5 A. M., rising bell; 5.20, prayers, and first breakfast; 5.40, study; 6.30, free; 7, lessons; 9, second breakfast; 9.15, lessons; 11, free; 12, reading; 12.45, P. M., dinner, afterward free; 2, lessons; 4, free; 5, study; 7, supper; 8.15, busy, work; 9, prayers; 9.15, younger pupils retire; 10, lights out.

Rossleben, with an income of 129,000 marks, is distinctly a school for noblemen. It has about 80 pupils in 7 gymnasial classes; boys are taken first in *Quarta*. The 30 free places provided for in the endowment are awarded by 4 members of the Witzleben family, direct descendants of the founder of the school. The discipline at Rossleben is truly Prussian. The extreme penalty, removal from the school, is attached to the violation of many rules. Typical prohibitions are the following: gambling in any form, having playing cards in one's possession, all aping of university societies and customs, having or drinking wine, beer, or liquors on school premises. No sweatmeats may be brought to the school; visits to the confectioners', as to beer gardens, are regulated by the teacher in conference. The *Rektor* inspects all correspondence in which the boys are a party.

Schulpforta—income 273,000 marks—is perhaps the finest type of upper-class school. Its situation, midway between Kösen and Naumburg, on the banks of the Saale, is especially charming. The gray stone walls of the old cloister, the ivy-

covered towers, the soft colorings of the tiled roofs, and the Gothic spires of the newer buildings combine harmoniously to produce an effect quite in keeping with the beauty of the natural surroundings. The grounds, several acres in extent, are walled in as they were, I suppose, 350 years ago. At the entrance stands an imposing building belonging to the administration department—for one must know that Schulpforta is a considerable village of itself, at least it provides employment to the usual number of government officials. Near by are the barns connected with the agricultural domains of the institution. Farther down the avenue and directly facing it stands the main group of buildings, consisting of the cloister, which is used as schoolhouse and boys' home combined, library, chapel, and gymnasium. The houses of the *Rektor* and the married masters, the hospital and home of the school physician, stand by themselves apart. The class- and study-rooms are dull and unattractive; the chapel, *aula*, and library have recently been modernized, but without violence to the spirit of their mediæval architecture. In the rear of the buildings is a spacious playground—such as would delight the hearts of the most fastidious football team—while several pieces of outdoor athletic apparatus and a bowling-alley for each class do not lessen its attractiveness for the German schoolboy. Of the 180 places in the school 140 are free. The Prussian Government awards half of these, and the remainder are distributed among certain Prussian cities and the Church. Even the casual visitor to Schulpforta must be impressed with the beauty of the place and the wealth of its historic traditions. Who can tell what events occurred here, what tragedies were enacted, before the quiet convent of Luther's time was transformed, under the influence of his teaching, into the Protestant school that Moritz of Saxony made it! A portrait of the founder hangs on the chapel wall—and a kindly face it shows, too, but his full coat of burnished armor bespeaks methods not wholly peaceful in the accomplishment of his purposes.

The modern boarding-school is of a different type. In so far as the modern spirit is commercial are these schools

adapted to that end, but there are many learned men in Germany who deprecate the hard and fast lines of the public schools and accordingly seek out for their sons a more elastic curriculum. Such a school must necessarily be private, though privileged to prepare for the volunteer army service. The Stoy'sche Erziehungs-Anstalt in Jena, which I choose to describe at length, is one of the best of its kind. For the student of pedagogy it has an especial interest in that it embodies to the very detail those ideas which made Professor K. V. Stoy one of the most famous educators of the last generation. The world already knows of his early struggles to found a truly educational institution on the Herbartian principles, which should at the same time be a training school for his university students in pedagogy. From the small beginning in 1843 there developed eventually the original Stoy School. But when Stoy was called to Heidelberg in 1866 the school in Jena passed into strangers' hands. Fourteen years later the old banner was again raised over a new institution bearing the name of the old master, but with a son of the former one, Dr. H. Stoy, as the new *Direktor*. The pupils of the old school transferred their allegiance to the new, and the friends of the father became supporters of the son. Its success was assured from the start.

The school property, situated on the rising ground in the northern part of the town, is some two or three acres in extent; a large piece of land on the heights a mile below Jena is also in the possession of the school, and there the head-master has a summer college where the boys find entertainment on many of their country excursions. The school buildings, four in number, are in the Swiss style of architecture. The schoolhouse, a three-story building completed in 1892, is admirably arranged for class purposes, well lighted and ventilated and heated by steam; in addition to classrooms it provides a large room for drawing, another for the very large collection in natural history, besides chemical and physical laboratories; another building serves for gymnasium and workshops; a third is the hospital, which is fitted up for ten patients.

The boarding hall, an imposing three-story structure, is the home of the *Direktor*, the unmarried masters and seventy boys. On the first floor are the head-master's rooms—eight in number—the kitchen, dining room and lower class study-rooms. The entire second floor, save for teachers' conference room, seniors' study hall, and a servants' workroom, is divided into four dormitories each with fifteen to twenty beds. The third floor is arranged for teachers' rooms and rooms for music, school library, and housekeeper's appointments.

The army life, which the average German boy looks forward to with pleasure, predisposes him to regard favorably the barrack system in his boarding-school. The dormitories of the Stoy School are scrupulously clean, but absolutely wanting in those conveniences which American boys consider indispensable. The single pair of hooks at the head of each bed and the row of towels surrounding the general washstand, were the sole articles of use or luxury that I could detect. The bedsteads are of iron, single and without springs. Each boy provides his own mattresses and bedding, as well as towels, napkins, spoons, and personal clothing. The requirements in these respects are unusually large and bespeak a good class of patronage. A boy's school expenses vary from 1200 to 1500 marks yearly.

The household management is exceptionally good; in systematic precision it is truly German—and Prussian at that. The housekeeper, besides the customary duties of such a position, takes entire charge of the boy's wardrobe and keeps it under lock and key. Except at stated times a boy may not have even a change of handkerchiefs without a written order from the *Direktor*. Twice a week clean underwear is given out and the soiled articles gathered up from the dormitories the next day. In the linen room there is a case for each boy's clothing; every article, even to the shoes, must be marked with the boy's number. Special requests for clothing may be made to the head-master after supper; the orders are written in the housekeeper's book and the articles, as ordered, are delivered in the sleeping rooms before the boys go to bed. Orders for

the shoemaker and tailor are taken in the same way by number, and the record is retained by the housekeeper, through whom all such business is transacted. In this work the housekeeper is assisted by a maid; she has, too, under her direction a cook, two waitresses who also do the chamber work, and two resident porters and their wives. The laundry work is done in town, the housekeeper being responsible merely for the mending.

The school is a Realschule with six classes. In addition there is a lower school of three classes for boys from six to nine years, which is intended to fit for any kind of higher school. The school usually numbers about 150 pupils, most of the lower school and some of the older boys being day pupils. French is taught from the beginning of the course, and English the last three years. Latin and Greek may be had only in private lessons. Mathematics and the sciences are especially emphasized. Elective subjects are quite unknown, as indeed is the case in all German schools.

The masters, twelve in all, are appointed by the *Direktor* subject to confirmation by the State Department of Education. The qualifications are the same as for the public higher schools, *i. e.*, university training followed by the state examination, and then a year in a pedagogical seminar and another year as trial teacher in a Gymnasium. The assistant city pastor gives lessons in religion, and there are two special music teachers. The salaries are practically the same as for the public schools, 1800–4000 marks; new appointees beginning at the minimum are advanced annually 100 marks for the first ten years, after which private arrangements are made. The ordinary supervision of the hall is divided among the masters, whether resident or not, each taking a day in turn—and a day means twenty-four hours! At Schulpforta the masters serve week about, taking the entire discipline, day and night. On Sundays and half-holidays extra supervision is required from the younger masters. Three conferences a week are held, two on house matters and one for the school. Subjects for discussion arise from the written reports of the supervisors, and from the class-books in which are noted the main points of every lesson, and the prog-

ress and deportment of the pupils. Aside from these conferences the masters not on duty are entirely free. In view of the fact that the average teacher gives not more than twenty lessons a week, it must be acknowledged, I think, that a master's position in the German boarding-school is not only more secure but less irksome than usually obtains in American schools. The difference in the national customs and modes of life is undoubtedly the prime reason, but whatever be the causes, the fact remains that the German is more independent and can less justly complain of the never-ending round of extraneous duties incident to boarding-school life.

By courtesy of the head-master I was enabled, on March 5, to spend an entire day with the boys of the Stoy School. It was not yet daylight when I began my rounds with the teacher in charge. At six o'clock the boys are called. One sleepy lad fumbles around for a bit of paper, and when it is found he brings it to the master for his signature. It is explained to me that the poor fellow has the pernicious habit of sleeping a little late in the morning—and you know Germans must never be late—hence this collection of teachers' autographs. Half an hour is allowed for dressing, turning down the beds, and putting all in order; at 6.30 the sleepiest boy of the lot must leave the room, not to return till 9 P. M. The dormitories are then carefully inspected by one of the boys, who notes in his book the numbers of those luckless chaps that have forgotten to hang up their towels, to open the windows, or otherwise have done offense to the letter of the law. In the meantime the boys are exchanging, in the corridor below, their house-slippers for shoes, which have been carefully polished for them over night and placed by the porter in the numbered compartments of a large case. Next they line up on each side of the hallway where they are inspected by the master; the roll is called by number, each boy speaking out his own. The monitors—the *Helfer*, so called, one for the sleeping-quarters, another for the study-rooms and boot-case, are appointed by the faculty from the upper classes and serve for one week—then give their report. Delinquents must at

once make good their failures; then breakfast is announced. Before taking places at the tables all gather about the piano to sing the *Morgenlied;* to-day it is a single stanza of one of Luther's hymns.

The breakfast would scarcely satisfy an American boy; two small rolls (no butter) and a cup of tea for the elder pupils, hot milk for the younger ones, is the entire bill of fare. But it is the German custom to breakfast on coffee and rolls. The room is of ample size, finished in dark woods and ornamented with the ever present signs of German patriotism—the busts of the recent Emperors, Bismarck, Moltke, Schiller, and Goethe. I remark that the circle is incomplete as the Grand Duke and Duchess and the Empress are wanting, but I am told that it is for lack of room, not of loyalty, that it so happens.

After breakfast comes an hour of study. There are four rooms for this purpose, three of them connected and under the supervision of a teacher; the first class and a few selected from the second enjoy the privilege of a separate room under the guidance of a monitor. Each boy has a table with drawer, and woe to him who lets confusion enter here; besides this he is allotted a shelf in the general bookcase and a small cupboard, which is under lock and key. This last is the boy's own, his sole possession that escapes inspection. I got a glimpse of the contents of one compartment belonging to a twelve-year-old; a pair of skates, a ball, an old cap, a handkerchief or two that had escaped the housekeeper—so much was on the surface, the rest must be left to imagination. At eight o'clock we go to the schoolhouse, where we assemble in the drawing room to sing the morning song. Recitations begin at the first quarter of the hour and last forty-five minutes each. According to the German plan each class, with the exception of the *Vorschule*, recites every period. The schedule for the upper classes, therefore, calls for some thirty-three to thirty-five periods a week, but naturally little outside preparation is expected.

At ten o'clock comes the second breakfast. Each boy gets

a generous slice of black bread with butter, which he eats while at play in the yard. And here let me remark parenthetically that the second breakfast is even of more consequence than the first; the roll and coffee may be dispensed with, but not so with the *Butterbrot*. In the Volksschulen the pupils generally are equipped with two huge slices of very black bread and a minimum of butter. At this mass the child gnaws away during every intermission of the morning, and notwithstanding the size of the piece, often eight to ten inches long by two thick, I have seldom seen a division made of the lunch for the different periods. Sufficient unto the day is the bread thereof!

The work of the morning is finished at twelve, save on Wednesdays and Saturdays when it runs till one o'clock, because of the afternoon half-holidays. At 12.15 the study-tables and bookcases at the hall must be in perfect order; the boys then line up in the corridor as in the morning for inspection, roll-call, and the report of the *Helfer*. By eight they go to the lavatory to make ready for dinner, which is served promptly at 12.30. It consists to-day of boiled rice and beef prepared, I am told, according to a recipe brought by one of the pupils from his home in Greece. It appears to be relished by the boys, who return their plates for two or three extra portions. Black bread completes the list. There is no butter, nothing to drink—not even water. The hour after dinner most of the boys spend in play about the yard. In the meantime I am initiated into the mysteries of the higher circle. The masters gather in the room of one of their number, who serves us with coffee, cakes, and cigars. Thus a pleasant hour is spent before the afternoon work begins. From two o'clock till four recitations are held as in the morning, save the *Vorschule* is free. From four until five the masters are in conference over the final examination papers of the first class. A little before five the boys again put on their slippers and are then admitted to the dining room, where they find slices of black bread spread with *Pflaumenmuss*, a sort of prune marmalade. A few, by order of their parents, get also a bowl

of hot milk. No especial order is kept during this afternoon meal—*Vesperbrot*, so-called; some sit at the tables or in the window seats, others walk about the hallways. Soon the bell sounds for study. At 6.45 there is another roll-call, inspection, etc., in preparation for supper.

The evening meal is the most interesting one, perhaps because the most elaborate of the day. We find at each table a large platter piled high with sandwiches of black bread and smoked herring. Tea and milk are served, and there is plenty of butter. In an astonishingly short time the platter is cleaned and replenished again, but this time with corned beef in place of herring. Whether or not the change is a concession to my American stomach I cannot say, but I have no doubt that the original package bore the brand, "Chicago Corned Beef." At the end of the meal the head-master notes the wants of the boys; first, in the tailor's book—No. 15 has torn his coat, 33 wants buttons on his vest, while nothing short of cleaning and pressing will suit the fastidious taste of 47; next is the shoemaker's turn, and various are the orders for new soles and patches that he gets; in yet another book are noted the numbers of those who last night disturbed the peace of one sleeping room, and in consequence are sentenced to do special tasks in the study-room for an hour after their peaceful comrades are in bed. Special requests from the first class are granted those who wish to be called an hour earlier to-morrow morning—the dreaded "final" is only one week distant; still another book goes to the housekeeper. Ten minutes are thus spent and no end of annoyance saved for twenty-four hours to come.

At 7.30 all boys go to the shops. Here they work in five divisions corresponding in general to the school years—the beginners are busied with paper work—box-making, bookbinding, etc.; the second division uses hand fret saws; next come classes in wood-carving, carpentry, and wood-turning in order. This work, which is in charge of master workmen from the town, is carried on only during the winter on Monday, Tuesday, and Friday evenings. Some good pieces are turned

out, but on account of the short time of training and the somewhat cramped quarters, the results are mainly beneficial by way of diversion for the pupils. I doubt not that the dormitories will be the more quiet to-night in consequence of the evening's employment, and the poor lads who must put in an extra hour of penance will find their tasks the more trying. The bell rings at nine o'clock for *abendlied*. Again all gather about the piano in the dining room, and, under the leadership of the head-master's wife, sing the evening song, a single stanza of a well-known hymn. The boys then pass in single file before Frau Stoy and the teachers present, shaking hands with all and wishing all good-night. Fifteen minutes later the peaceful part of the community is in bed. The work of the day is completed with the final inspection of the dormitories by the two teachers who sleep with the boys to-night. We pass from room to room, turn down the lights, and say "*Gute nacht*," the signal for quiet. That the average boy will gladly heed the injunction I am persuaded no less by the drowsy replies that reach our ears than from my own feelings at the prospect of coming rest after a long day of interesting and novel experiences.

The order for Sunday is varied by rising an hour later, church from 9.30 to 11.00, after which a period is set apart in which letters must be written home. At dinner beer is served to those who wish it, all getting one glass, the older boys two glasses. Sunday afternoons, as on the Wednesday and Saturday half-holidays, the entire school, in charge of one or two masters, takes a long walk; on week days the excursion rarely lasts longer than two hours, but on Sunday it is customary to prolong it to three or more. In summer the first order for Sunday morning is a swim in the river at six o'clock; on week days the bathing hour is 4 P. M., and every boy in the school must join in the sport under the eye of the master and the teacher in charge. On Wednesday and Saturday evenings, when swimming is not possible, the boys go to the bathroom dressed in bathing-suits and there enjoy a shower-bath *en masse*. The head-master

takes special supervision of this hour. On retiring each boy finds on his bed a complete change of linen and underwear, which he must wear on the morrow. Once a month on a half-holiday there is a general hair-cutting, the barber coming to the hall, after which each boy takes a warm tub bath.

The Stoy school has been distinguished from the days of the "old doctor," as I hear him called, for especial attention to bodily development, even making the physical training as important an item in the curriculum as any other. The long walks above mentioned on three days of the week tend directly to this end. The summer trips, of which I shall speak later, are not only valuable from a general educational point of view, but they serve to test the bodily vigor of the boys. The preparation, however, which enables even the youngest boys to undergo long tramps for twenty days in succession, consists mainly in class exercises in gymnastics. The gymnasium (*Turnhalle*) is fitted up with parallel and horizontal bars and such apparatus as is necessary for vaulting, jumping, etc. In comparison with an American gymnasium of the better class the outfit is scanty, but the deficiency is in large part made good by outdoor apparatus. Poles and ladders for climbing, all framed together, and bars of various kinds, find a place here. It is needless to say that the boys appreciate most what is at all times accessible to them. I have seen a dozen of the smaller lads, bareheaded in midwinter, climbing around like monkeys on the highest framework and apparently enjoying the fun to the utmost, despite the slippery rods and the flying snow. Once a week the entire school has a class exercise in gymnastics (*Turnen*), and on two other days the juniors and seniors exercise separately. For this purpose the scholars are divided into groups of six or eight, each with a leader, or so-called *Vorturner*. In a special hour on Sunday the *Vorturner* receive directions and drill in new movements which, with the master's help, they are expected to carry out in the exercises of the week.

It was my pleasure to attend the Stoy *Turnfest* held last August on the last Sunday of the semester. The student

body marched into the playground in column of four, headed by a drum corps and buglers. Following some evolutions, a hearty song was sung, and an exhibition given on the parallel bars by ten of the older boys. The upper school then separated into squads of eight, each of which had a special task, *e.g.*, vaulting, jumping, exercise on horse, buck and bars. Calisthenics and games by the lower school called out some applause. But to an American the striking feature was the lack of all competition, and indeed not till toward the end of the programme was any spirit manifested, and that only in running and pole-climbing. Nevertheless it would be an error to conclude that the boys found little pleasure in the performance; on the contrary the winners received as hearty congratulations as one could wish, and the prizes and laurel wreaths were as proudly displayed as if won in that heroic struggle miscalled football. The pent-up enthusiasm of the day seemed to find full expression at the close of the singing of "*Deutschland, Deutschland, über alles*."

I am told that there are field sports, but I have seen none of them save a flimsy attempt at football, a recent importation from England. The fact is there is no time for sports as we know them; there are no two hours of the week in succession not provided for in the school schedule. The theory that short periods of alternate work and rest produce the best results is characteristically German, but, as one of the boys remarked to me, "two 'works' to one 'play' is nearer the truth." There is as little time for indoor diversion as for sports. The absence of a boys' parlor or reading room testifies to this. But in music they find a solace quite unknown in American boys' schools. There are three music teachers: one gives his entire time to the violin, piano, and orchestra; a second conducts the singing, and a third gives private lessons on the 'cello. Twice a term there is a private musical recital, followed by dancing, to which the boys' friends are invited; every other year in midwinter a public recital and ball are given in the town opera house; in alternate years a large masquerade ball is held, to the great satisfaction of the boys.

XUM

The birthdays of the Emperor, the Grand Duke, and Luther are also publicly celebrated—generally by speeches interspersed with music.

The great event of the year, however, the one around which all extraneous interest centers, is the *Schulreise* of the summer holidays. More than forty years ago Professor Stoy undertook, with the boys of his training school, his first trip into the Thuringian forest. Thenceforth it was made a veritable part of the curriculum, and many and strange are the stories told of incidents connected with these early tours. In these days the journeys are more pretentious, owing to the greater depth of the patron's pockets. Early in July the boarders, with the entire corps of teachers, spend four days in the Thuringian forest. Last summer the region between Blankenburg and Coburg, including the Schwarzerthal, was explored. On the way glass works and stone quarries were visited, and a day was spent at the famous old castle in Coburg. But the real pilgrimages come in August. The hall is divided into three parties, according to age and strength of the pupils, and to each party three or four teachers are assigned. The first division, led by the head-master, usually goes to South Germany; a few days are spent in Munich with the special view of studying architecture and the rich collections of the city museums, after which the Bavarian Alps are visited. Last August the route included Nürnberg and Augsburg; thence through Switzerland into Tyrol and on to Venice; thence back to Munich. During this trip of three weeks, the boys were most of the time on foot; travel by rail was of course necessary, but was indulged in sparingly. The total expense per boy was 140 marks.

The customary routes for the second division are (1) the Harz Mountains and the Rhine valley, (2) Dresden, Prague, and Bohemia, or (3) the Bohemian forest, along the Danube to Passau, Nürnberg, home. The third party goes to the upper valley of the Saale and thence through the forest to Eisenach.

The educational value of these journeys lies chiefly in the fact that, inasmuch as the entire hall must join them, a general

preparation can be made a part of the school-work for a year in advance and the results summed up afterward in permanent form. The routes are carefully planned from the beginning of the fall term by the masters in conference. Accurate maps are drawn by the boys, and every effort is made to arouse the scientific imagination. The history of art, especially in architecture, is studied and the lessons in general history are made to supplement the special means of preparation. On the trip each boy makes notes and sketches of the chief points of interest; these are worked over immediately at the end of the trip, that nothing be lost. Before Christmas it is expected that he will write a complete history of his journey, and, as this is a part of the essay-writing for the fall term, the pupil profits from suggestions from his teacher and has the additional stimulus of writing on his own experiences and making a book for himself. Some of these accounts are most interesting. I have seen one of some three-hundred octavo pages bound in two volumes, written by a member of the second division; with its tasty head-lines, initial letters, and numerous pen-and-ink sketches it is really artistic. To be sure, not all the boys are artists; but most of them can show a good account of what they have seen.

To promote good fellowship among the students, the school is divided into five clubs, *Kameradschaften*, to each of which belong two or three teachers. The older members of a club are in a way responsible for the conduct of their fellows. Comrades are expected at all times to be mutually helpful, and it is a point of honor that the strong should aid the weak. Pin money for the boys is deposited with the senior masters according to *Kameradschaften;* cash books must be kept by all, and those of the juniors are left with the masters. The usual allowance varies from 1.50 marks a month for the youngest to 3 marks for the seniors.

There is little need, as we have seen, for boys to go into town on errands, and the permission is rarely granted. The desire for sweetmeats, no less strong here than elsewhere, is scarcely considered a legitimate excuse, but with true Yankee

ingenuity a young friend of mine—I hope I am giving nothing away—is doing a flourishing business as a result of the ban. These operations, confined as they are to imports—whether on the theory of free trade or tariff for revenue only, I am not informed—undoubtedly contribute not a little to the commercial training of all concerned. Alert as are the masters to every influence that tends to a complete education, here is one, I am disposed to believe, whose value they have not discovered or else have failed to recognize. Who shall say that the coming Herbartian may not find herein the very elements of that "many-sided interest," the *sine qua non* of all instruction! But mischief is not rampant among the Stoy boys; indeed one must look long and closely to detect signs of the ordinary human weaknesses. This is due in part to the thorough supervision, but a still more potent cause is that these boys are Germans—and Germans are born to obey.

No feature of German school life calls out more criticism from foreigners than the severely exacting discipline, especially of Prussian schools. Good masters have remarked to me—and I am inclined to credit the statement—that the average schoolboy considers an amiable teacher as a prodigy fit only for girls' schools. The kindly methods of Pestalozzi and Froebel have not to any appreciable extent influenced the habits of the average German teacher. The all-pervading military spirit tends in a different direction. Most boys are anxious to serve in the army, if they can do it as volunteers. Something by way of a uniform and brass buttons is the delight of the youngsters, and as they grow older their favorite game of "war-play" is barely left off before the days of actual service. But there is a wide difference between a conscript and a volunteer: the one serves two years at no expense to himself; it costs the other at least 1500 marks for the privilege of "wearing the Emperor's coat" one year. It is not the difference in length of service that begets the eager volunteer, nor yet the desire to expend a sum greater than is necessary for a year's attendance at the university, but above all considerations stands social rank. To have had ten years of successful

schooling counts for nothing when reckoned with that higher distinction of belonging to a family that can afford the ten years of training and the 1500 marks besides. There it is in a nutshell! Not only the boy himself but his entire family as well are concerned in his success at school. The final examination *must* be passed at all hazards, and no means thereto, however severe or exacting, if successful in the past, will be repudiated by the patron. The boy can afford to take no chances. The result is an obedience bordering on servility. It is a factor of prime importance in estimating correctly the peculiarities of German schools, and especially must it be reckoned with in the boarding-school. The original courses are to be sought in the social and national life rather than in the personality of the teacher.

JAMES E. RUSSELL

LEIPSIC, GERMANY

Life in a French Lycée was described by M. Georges Jamin in the EDUCATIONAL REVIEW for March, 1893.

V

RECENT SCHOOL LEGISLATION IN THE UNITED STATES

One year ago I gave a brief and incomplete summary in this REVIEW of important laws affecting educational interests adopted in the various States and Territories during the preceding twelve months. The list of such laws might have been indefinitely extended; doubtless many were omitted which people in the localities directly affected by them would have thought more important than some which were singled out for treatment. The purpose of that article, however, was rather to suggest points of interest in various laws than to give a complete digest of the year's legislation. What is mainly desired, it must be borne in mind, is a comparative showing of the progress made by our States in educational systems and methods, so far as that progress is recorded in their statute law.

In the present article such a summary is again made, covering the past year and including the work of fourteen legislative sessions. It must be remembered that 1894 is an "off year" in State legislation, since most of the States hold their biennial sessions in the odd years; this fact accounts for the comparatively small number of laws that have been passed during the period under review. The most noticeable activity has been in a few Eastern States which still have annual sessions. The biennial sessions of Louisiana, Maryland, and Mississippi passed no laws of general interest on educational topics.

To begin with those laws which attempt to regulate the attendance of children at school. Of such there are two distinct classes—the compulsory education laws, so-called, and the factory or child-labor acts, applying only to the children

whose lot it is to become wage-earners at a very early age. It chances that this year two of the leading States of the Union have revised their school attendance requirements. New York has made some distinct improvements in her law, while Massachusetts, always at the front in such legislation, has made few changes of consequence. The duration of attendance in each year required by Massachusetts is thirty weeks, wherever schools are kept that length of time; in New York it is eighty days. As regards private schools at which attendance can be accepted in lieu of public-school attendance, New York merely demands that instruction in them shall be "substantially equivalent" to that in the public schools; Massachusetts goes further, and insists that private schools be approved only when the teaching in all the studies required by law is in English, and equivalent to public-school teaching. This requirement has especial significance in view of the bitter contest over the parochial schools in Illinois and Wisconsin four years ago, and in view also of the rapid growth of a French-Canadian population in Massachusetts, with the attendant spread of parochial schools. The provision is by no means new to Massachusetts, having had a place on the statute books since 1879; but its incorporation in this latest revision of the school code shows a determination to adhere to a time-honored policy amid changing conditions.

Each State provides for the establishment of truant schools and clothes certain officers with power to search for and arrest truants; but the New York law imposes no definite penalty on the parents, on whom the blame often lies. In this respect the Massachusetts statute has been proven superior by long experience. New York, however, aims to secure the enforcement of her law by granting the State Superintendent of Public Instruction power to withhold one-half of the public school moneys due any city or district which fails in this respect. In short, while Massachusetts looks after all truant children, and punishes the parents when the fault is theirs, New York punishes the children only, and when the local officers are remiss in their duty causes the whole community

to suffer by diminishing the school fund, in the meantime allowing ignorant and greed-ruled parents, who are often responsible for the mischief, to go scot-free.

The factory laws of Massachusetts and Rhode Island have been recodified. So far as these acts have to do with truancy, they have been made familiar to readers of this REVIEW.[1] The minimum age limit of employees in Massachusetts is thirteen, and in Rhode Island twelve years. The provisions for securing the school attendance of factory children in Massachusetts remain substantially the same as in past years.

Iowa, a State which has no compulsory attendance law, is by no means dilatory in seeking to place school privileges within the reach of the very poor. A law of last winter gives each school board in the State power to use the contingent fund for the purpose of supplying books to the indigent pupils, "when they are likely to be deprived of the proper benefits of the school unless aided by the district with books." The State superintendent believes that if all the boards will take action in accordance with the spirit of this provision, the percentage of attendance can be materially increased. New Jersey furnishes books and school supplies to all children, rich and poor alike, paying for the same by special tax.

Massachusetts now extends the privileges of her high schools to every child within the limits of the State; a law of the present year requires any town not maintaining a high school to pay the tuition of a resident child attending the high school of another town or city, and the law further authorizes the town to pay transportation expenses, but this is not mandatory. In cities of twenty thousand inhabitants, after September 1, 1895, manual training will be required as a part of the regular high-school work, the course to be subject to the approval of the State Board of Education.

Temperance physiology is added to the curriculum of New Jersey public schools. It is now a required subject in the schools of nearly all the States in the Union. In State after State, laws have been passed compelling public-school instruc-

[1] "Compulsory education in the United States," EDUCATIONAL REVIEW, IV: 47.

tion to be given in the effects of alcohol and narcotics on the human system. Credit for this excellent reform is almost wholly due to the wise and systematic efforts of the Woman's Christian Temperance Union. The science of cookery is now added to the list of subjects permitted to be taught at public expense in the schools of Massachusetts. The matter is left to the discretion of the school committee in each case. Massachusetts has found it necessary to forbid vivisection in public schools, and to restrict all forms of dissection to the classroom, only pupils engaged in the study to be illustrated being admitted as witnesses; for purposes of exhibition, dissection is prohibited. New Jersey purposes to encourage patriotism in public-school pupils by arranging appropriate exercises for the Fridays immediately preceding Washington's birthday, Memorial Day, July Fourth, and Thanksgiving Day.

Mention should be made of the progressive spirit shown by Utah in adding free kindergartens to the school system of the Territory, and permitting the use of public money for their maintenance. The kindergartens are to be open to all children of the Territory between the ages of three and six years. Provision is also made for securing qualified teachers.

The advanced position held by Massachusetts in educational legislation is made the more evident by instances already cited in the course of this article. It must be conceded, however, that in the important matter of teachers' examinations the old Commonwealth is considerably behind some of her sister States. Certificates of some kind are required of all who teach; but this requirement is of small consequence if the examinations for which the certificates are given are of doubtful thoroughness. As a matter of fact, the character of the examination depends altogether on the efficiency of the local authorities. The examination may be, and frequently is merely nominal. The diploma of a State Normal School is, of course, an equivalent of a certificate. This year's General Court has passed the first law in the history of the State on the subject of examination of teachers by State authority. It

provides that the State Board of Education shall cause public examinations to be held, to "test the professional as well as the scholastic abilities of candidates." A certificate of qualification is to be given to all candidates who pass satisfactory examinations in such branches as are required by law to be taught, and who in other respects fulfill the requirements of the board; such certificate to be either probationary or permanent, and to indicate the grade of school which the person named is qualified to teach. The law further requires a list of approved candidates to be kept in the office of the secretary of the board, as a source of information to school committees in search of teachers. Certificates thus issued may be accepted in lieu of personal examination by school officers. It would seem that the introduction of State examinations should do something to raise the standard of requirements throughout the State. It cannot, however, fill the place of a system of uniform local examinations, prepared by a central authority. The State is making excellent provision for the training of teachers, having appropriated moneys for four new normal schools to be established at once. Virginia supports summer normal schools for both white and colored teachers. Georgia will hereafter admit female students to the State normal schools.

Women now participate in school elections in several States. In Ohio they are now entitled to vote and to be voted for at elections of school directors and members of boards of education. In Iowa their right to vote is restricted to questions involving the issuing of bonds or the increase of the tax levy; they have no voice in the choice of school officers. The courts have declared unconstitutional the New York law permitting women to vote for school commissioners.

The New England States having one by one abolished the district system of school organization, substituting therefor the township system, New Jersey has this year taken the same step, for reasons similar to those which prevailed in New England.[2]

[2] Maine was the last State of the New England group to make the change. See EDUCATIONAL REVIEW, VI: 17.

Superintendent Poland has tersely stated these reasons in a circular of information concerning the new system:

"The present school district system of New Jersey was inaugurated many years ago when conditions, especially in farming communities, were very unlike the conditions that now prevail. The population of the State was more uniformly distributed; the wealth of the State also was more uniformly distributed. It was possible at that time to divide up a township into several school districts of pretty nearly uniform size, population, and wealth. The districts thus created contained, in most cases, children enough to enable the schools to be maintained economically. Farm property was more valuable than now, and special taxes could be raised without imposing too great a burden upon the taxpayer.

"But with the gradual transfer of the farming interests of the country to the Western States, rural conditions in the Eastern States have become greatly altered. Farms once productive and profitable have been, in many cases, abandoned. Instead of remaining upon the old homestead the farmer's son has hastened to the village or city—to the center of manufacture and trade. Why? Because the opportunities for successful money-making were much larger in the larger community. This gradual desertion of the farm for the store and workshop has been going on in the New England States for nearly a half century, with the result of an almost complete abandonment by the original owners and their descendants of once large and prosperous agricultural areas.

"Although suffering much less than New England in the depreciation of farm property, the same general conditions prevail in our own State. Our villages and cities are growing larger and wealthier; our rural districts poorer and more sparsely populated.

"It would be easy to prove by figures at hand that scores of school districts once containing 30 to 50 children of school age now report 10 to 20 only."

The advantages which it is hoped may result from the

adoption of the township system are thus summarized by Superintendent Poland:

"Equal school privileges for all, equal school burdens for all, better school buildings, better school equipment, longer school terms, better qualified teachers, better school supervision, increased attendance and interest, and, in addition to all, more economical school expenditures."

The township system, by consolidating several districts, will enable one graded school to be maintained in each township, open to all children alike. District lines being abolished, each child can attend the nearest school in the township. While the privileges are thus made equal, the burdens also become equal, since all the schools of the township are to be a common charge on all the property of the township. At the same time, the buildings and equipment will improve in quality. It will now be possible for all schools to be kept open the full legal time. Improved finances will lead to the employment of better teachers. Economy will be secured by maintaining one school in many cases where two weak and inefficient schools are now maintained, and also by the purchase of books and supplies in larger quantities.

The township system has been thoroughly tested in Pennsylvania and a number of Western and Southern States, where conditions vary from those of New England, and the testimony is practically unanimous in its favor.

A commission appointed in 1893 to investigate the school system of New York City and report plans for its improvement presented the results of its labors to the last New York Legislature; but its recommendations did not meet with the approval of that body, being considered too radical. A similar commission is now at work in Brooklyn. The New York Constitutional Convention will probably deal with the subject of education before the publication of this article; several changes in the organic law of the State are proposed which will profoundly affect educational interests.

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NEW YORK

VI

THE BICENTENARY OF THE UNIVERSITY OF HALLE

During the past summer the old German city of Halle-on-the-Saale, famous in earlier ages for its salt works, and recognized now as a city of commercial activity and importance, was the scene of an interesting event in educational annals; for on August 1, 2, 3 and 4 was celebrated in a manner befitting the occasion the two-hundredth anniversary of the founding of its university. Two centuries in the life of a university, however, is not synonymous with old age, especially in Europe; and it may be recalled that an American college, Harvard University, a few years ago celebrated its 250th anniversary; but the birthday of a university is an occasion of sufficient moment and rarity to deserve special commemoration. The spirit with which the anniversary was celebrated in Halle showed that its university is in the prime of life and youthful vigor.

This institution of learning owes its birth to a royal founder—Frederick, last Elector of Brandenburg and first King of Prussia. In 1694, on his birthday, while visiting Halle, he incorporated the university and gave it his name. The beginnings had already been made three years before by the renowned jurist Christian Thomas, better known as Thomasius, and by the distinguished and philanthropic theologian, August Hermann Francke. Both these men had been drawn to Halle by the atmosphere of livelier intellectual activity and freer thought which the influences of the Reformation had there created, and the university itself is to be counted as a child of the spirit of the Reformation. Together these men began to build upon the basis of the existing high school. Thomasius was even so advanced as to venture the innovation of delivering his law lectures in German

instead of in Latin! The two faculties which the activity of Thomasius and Francke represented were augmented in 1706 by the addition of a philosophical faculty under Christian Wolff, which soon proved a formidable rival to the theological faculty in influence and importance. Medicine was the last faculty to be represented, but the fame of its lamented great surgeon, Richard von Volkmann, and the excellence of its clinical buildings, have rendered its reputation in modern times widespread. The establishment in 1862, moreover, of the Landwirtschaftliches Institut, as a school of applied agriculture in connection with the university, was a marked step forward and a decided gain to the university on its practical side.

The festivities of the anniversary celebration began on the evening of August 1, when his Highness, Prince Albrecht of Prussia, as representative of the emperor, arrived at the railway station and was escorted to his residence by the students in full corps attire, with banners and torches. Early on the following morning the faculty and invited guests assembled in the cathedral, where service was held by the university chaplain. They then proceeded to the great Aula of the university, where Prince Albrecht, as imperial representative, formally opened the jubilee, and presented to the university a portrait of Emperor William, which his Majesty had had painted for the occasion as a personal memento and as a memorial to show the unbroken interest which Prussia had felt in the University of Halle since the days of its royal founder King Frederick.

For nearly two hours without interruption, salutations, gifts, and remembrances continued to be presented by delegates from many universities and from many lands. From the United States greetings were sent by no fewer than eleven universities,—Chicago, City of New York, Columbia, Cornell, Harvard, Johns Hopkins, Michigan, Northwestern, Pennsylvania, Wisconsin, and Yale. Among the mementos was also a handsome testimonial signed by nearly a hundred literary and professional men in various parts of the United

States who are proud to claim the University of Halle as an Alma Mater. All these tokens of friendship and regard were accepted by Rector Dr. Beyschlag, in a series of brief responses, with a charm of language, happiness of thought, an ease and elegance of expression, that quite won the hearts of all who were so fortunate as to be present. Particularly happy was his response to the representatives of universities from foreign lands, emphasizing the bond of the universal brotherhood of knowledge, that knows no distance, separation, nor dividing lines, but which recognizes in science that one great field without bounds which belongs alike to all, a community of territory possessed in perfect harmony and full accord.

On the third day of the celebration the faculty and delegates marched in full university regalia from the university to the church in the market place to listen to the rector's commemorative address. The ceremonies of the morning were brought to a close by the announcement of the honorary degrees which the university on this auspicious occasion had taken the opportunity of conferring upon scholars in Germany and in foreign lands. Upon the list was the name of one American, President Francis A. Walker of the Massachusetts Institute of Technology, honored for his distinguished contributions to political and economic science. No name was received with more enthusiasm than that of Germany's most famous scientist, von Helmholtz; for to him not alone the honor of the degree was given, but there was added the universal and hopeful wish for the recovery of his now failing health.

During the entire anniversary the citizens of Halle seemed to endeavor to outdo the university in hospitality. A torchlight procession, a river party on the Saale, an elaborate display of fireworks, a grand banquet, and flowers, not metaphorically but literally strewn in the streets, were some of the ways in which they sought to give expression of goodwill and welcome to their guests. Last, but not least, among the festivities was a general university *Kommers* in true

German student style, without which the celebration would have been incomplete.

The last day of the jubilee was spent in a visit to the interesting old city of Wittenberg, so full of Reformation memories, and seat of the university made famous by Luther. In 1817 this university was merged in that of Halle, and from that time dates the present official title, *Die vereinigte Friedrichs-Universität Halle-Wittenberg*. It was peculiarly fitting that the closing ceremonies should be held in Wittenberg, the cradle of the Reformation, and the various addresses that were made there were true to the historic spirit of the place. The same heartiness of welcome, the same genial hospitality, the same model system of arrangement and management that characterized all the jubilee, prevailed. And as in the evening the festivities came to an end, and the anniversary celebration was brought to a close, from every side came the expression of appreciation and of thanks to the united University of Halle-Wittenberg, whose birthday had been the occasion of so many pleasant associations, friendly reunions, interesting addresses, and impressive and inspiring speeches. And as the guests once more offered their congratulations, and said farewell, it was with the universal wish that not one but many centuries may yet be granted to the University of Halle-Wittenberg—(to adopt the words of another), the university which can claim with pride the world's great teacher, Martin Luther, and the world's most famous student, Hamlet.

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VII

A STUDY OF THE MATHEMATICAL CONSCIOUSNESS

WELLESLEY COLLEGE PSYCHOLOGICAL STUDIES, COMMUNICATED BY MARY WHITON CALKINS.

A. The psychical character of mathematical processes. By Iza B. Skelton and Elizabeth A. Stark, with the assistance of Mary Cooper Adams and Alberta M. Welch.

No serious psychological study can be undertaken which does not lead to pedagogical conclusions, for every advance in the clear understanding of any phase of consciousness brings with it new methods, or more intelligent use of the old methods, for that development of the individual which is the aim of all education. In this belief, the abbreviated results of a study of the psychology of the mathematical consciousness, undertaken by students of the experimental psychology class of Wellesley College, are offered here.

The materials for the statistical part of the study are statements (in reply to definite questions) received from 87 young women and from 30 young men. The men are students at Harvard; 75 of the women are Wellesley students, 12 are members, from sixteen to twenty years of age, of a preparatory school. In the comparison between students of algebra and of geometry, 50 Wellesley records were supplemented by 50 from persons outside of present college environment. The figures are evidently too few to lead to demonstrated conclusions, so that the results claim merely a certain suggestiveness.

In the study of the records a threefold distinction is proposed: first and fundamentally, between those subjects who put themselves on record as "liking mathematics," and those who profess the opposite feeling, briefly designated as the "mathematical" and the "non-mathematical." In the second place, a comparison is made between the women and the men.

Here the small number of the men's records makes the results especially tentative. Finally, the subjects who prefer algebra —briefly designated as "algebraists"—are contrasted with those who prefer geometry—referred to as "geometricians." It may be stated at the outset that 37 of the latter (74 per cent), as over against 28 algebraists (36 per cent), belong to the class of those who "like mathematics."

I. *Observation*—Mr. Huxley makes the sweeping statement that "mathematics is that science which knows nothing of experiment, of observation, of induction, of causation," adding that mathematics rests only on deductive reasoning and consists of subtle deduction from a few truths which have become axiomatic. The assertion is as misleading as most broad generalizations. Mr. Huxley does not, for instance, suggest the method of the discovery of axiomatic truths, which is necessarily through observation. The history of the discovery of algebraic truth illustrates perfectly the part played by observation or experiment. Sturm's theorem concerning the roots of an equation was, he says, the result of observation while performing mechanical investigations, in connection with compound pendulums. The system of logarithms is a mathematical possibility which had for many years stared mathematicians in the face, but the observation of a Napier was needed to bring it to light. Not merely the great discoveries of mathematics illustrate the need of observation. Every operation in algebra, except the most mechanical, exemplifies it. Almost every student in mathematics has had the experience of going through a long and difficult operation, because it came as a problem under a certain rule, and has found at the end that if he had but observed the form of the problem, the operation could have been effected by the means of a simple transformation.

If we turn to geometry, we find the same true. The entire history of its development is a history of observation and experiment, from the days of the rope-fasteners of Egypt who noticed that if they stretched a rope round three pegs so that the sides of the triangle were in the ratio of 3, 4, 5, the angle opposite the longest side would be a right

angle, down to the time when Newton was enabled to demonstate his proposition on attraction and gravitation by the aid of geometrical methods.

The growing tendency in our schools to leave the demonstration of geometrical propositions to the student demands an exercise on the part of the latter of the keenest powers of observation, for the proof of every geometrical proposition demands first of all the observation of the points wherein it can be made to depend upon previous demonstrations.

II. *Imagination and memory*—Every psychologist knows that the popular tendency to identify the mathematical with the unimaginative mind is due to an indefensible limitation of imagination to the artistic consciousness; that, on the other hand, the ability to deal with data so abstract as those of mathematics, requires constructive imagination of a very high order. To the consciousness not only of infinity and of space, but of the revolutions of solids and of the superpositions of plane figures, and even of the simple properties of numbers, distinct imaginative power is required.

One of the questions of our statistical investigation related to the sense-type of imagined numerals. The answers of fifty children,[1] to part of this question are added to the summary of results in

TABLE I

SENSE-TYPE OF NUMERALS

	Women (87)		*Men* (30)		*Children* (50)		*Total* (167)	
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*
Images, visual only.....	15	17.4	4	10.33				
Images, articulatory only	5	5.8	2	6.66				
Images, auditory only...	1	1.1	0	0				
Images, graphic only....	0	0	0	0				
Total visual images.....	73	84.8	27	90	44	88	144	86.22
Total articulatory images	60	69.7	23	76.66	47	94	130	77.84
Total auditory images ..	20	23.2	5	16.66				
Total graphic images ...	17	19.8	7	23.33				

The prominence of the articulatory imagination, that is of the imagination of the word as pronounced, is simply an added

[1] These statistics were gained by Miss E. S. Adams. Cf. B, p. 280.

proof of the significance, emphasized by every psychological research, of motor processes and images. The importance of visualization is not surprising. In geometry, and in all forms of mathematics involving space conceptions, the visual, which is pre-eminently the concrete type of mathematical imagination, will presumably crowd out the articulatory or verbal type. This is indicated by the tabulated answers to the question: Do you find it easier to remember (*a*) words? or (*b*) how things look, sound or feel?

TABLE II

VERBAL AND CONCRETE MEMORY

a. *Comparison of men and women*

Memory is	*Wellesley*				*Harvard*				*Summary*[1]				*Neutral*	*Total*[2]
	Like Mathematics		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*			
	No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*		
Verbal	2	4.8	10	31.22	1	6.66	1	14.28	3	5.35	11	28.2	1	9
Concrete	41	100	24	75.	15	100	7	100	56	100	31	79.47	17	98
Both[3]	2	4.8	2	6.2	1	6.66	1	14.28	3	5.35	3	7.69	.....	6
(No reply)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Total[2]	41	.....	32	.....	15	.....	7	.....	56	.....	39	.....	18	117

b. *Comparison of algebraists and of geometricians*

Memory is	*Algebraists*		*Geometricians*		*Total*
	No.	*Per cent*	*No.*	*Per cent*	
Verbal	10	20	6	12	16
Concrete	40	80	44	88	84
Total	50	.....	50	.....	100

[1] To save space, the "neutrals" and the totals (of verbal and of concrete memory) are given only in the summary.

[2] Since these totals (of verbal and concrete memory) contain an uneven proportion of those who do and of those who do not like mathematics, their per cents of the entire number might indicate an inaccurate average, and are therefore omitted.

[3] The number of those who have "both" is added to the numbers of those who have verbal and of those who have concrete memory; but in the total this number of those who have "both" is counted but once.

The general results of this inquiry are then the following: Our subjects as a whole have concrete rather than verbal memories. But the proportion of verbal memories is five times as great (28.2 to 5.35 per cent), among those who do not like mathematics as among mathematicians, and one and two-third times as great (20 to 12 per cent) among algebraists as among geometricians, so that we may conclude that *concrete memory characterizes the mathematically inclined, and belongs to geometricians to a greater extent than to algebraists.* Only two of the men among our subjects have verbal memories.

That the mathematician, in spite of his dependence on reasoning, may be, contrary to a common opinion, the possessor also of a good memory, is shown by the following tabulation of answers to the question: Do you remember easily or with difficulty? The distinction between algebraist and geometrician shows a slight per cent in favor of the latter, a fact which is perhaps significant when we remember that geometricians are more likely than algebraists to be especially interested in mathematics. The difference, in the other table also, is slightly, though only slightly, in favor of the "mathematician."

TABLE III

EASE AND DIFFICULTY OF REMEMBERING

a. *Comparison of men and women*

Memory is with	*Wellesley*				*Harvard*				*Summary*				*Neutral*	*Total*
	Like Mathematics		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*			
	No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*		
Ease	21	50	13	40.6	7	46.66	4	57.14	28	49.12	17	48.57	8	53
Difficulty	21	50	15	46.8	8	53.33	3	42.85	29	50.87	18	51.42	7	54
Average			4	12.5									3	7
No reply														3
Total	42		32		15		7		57		35		18	117

b. *Comparison of algebraists and geometricians*

Memory is with	*Algebraists*		*Geometricians*		*Total*
	Number	*Per cent*	*Number*	*Per cent*	
Ease	25	50	23	46	48
Difficulty	25	50	27	54	52
Total	59	.....	50	.....	100

The possibility of training the memory for mathematical contents is suggested by the replies to another question: "Can you carry a long calculation in the mind?" The results are given in

TABLE IV

ABILITY TO CARRY ON LONG MENTAL CALCULATIONS

a. *Comparison of men and women*

Calculation	*Wellesley*				*Harvard*				*Summary*				*Neutral*	*Total*
	Like Mathematics		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*			
	No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*		
Can be carried	24	57.14	6	18.7	9	60	1	14.28	33	57.89	7	17.94	7	47
Can *not*	18	42.8	26	81.2	6	40	6	85.71	24	42.10	32	82.05	10	66
(No reply)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
Total	42	.....	32	.....	15	.....	7	.....	57	.....	39	.....	17	117

b. *Totals of men and women compared*

Calculation	*Wellesley*		*Harvard*		*Total*
	No.	*Per cent*	*No.*	*Per cent*	
Can be carried	32	38.5	15	50	47
Can *not* be carried	51	61.4	15	50	66
(No reply)	4	.....	.....	.....	4
Total	87	.....	30	.....	117

c. *Comparison of algebraists and geometricians*

Calculation	*Algebraists*		*Geometricians*		*Total*
	No.	*Per cent*	*No.*	*Per cent*	
Can be carried.....	24	48	20	40	44
Can *not* be carried.....	26	52	30	60	56
Total.....	50	.....	50	.....	100

The proportion, 57 per cent, of mathematicians who can carry a long calculation in the mind is thus more than three times that (17 per cent) of those unfriendly to the subject, and presumably less well-trained. The records are in favor of the men as a whole, giving 50 per cent of the total number, as contrasted with 38 per cent of the women, who can remember long calculations. There is a smaller per cent—8—in favor of algebraists.

III. *Thought*—Though imagination is the foundation of every mathematical, as of every conscious, process, and though memory is at least as common among mathematicians as among average individuals, the essential characteristic of the student of mathematics is, nevertheless, the power of thought, of identification, comparison, reasoning. The ability to notice the similarity or dissimilarity between objects or relations, and to classify them accordingly, is nowhere more useful than in mathematical work. In algebra the given problem must be classified as one to whose solution certain rules may apply. In geometry a theorem must be classified, that it may be demonstrated by the aid of truths previously demonstrated. In analytical geometry an equation is classified according to its degree, its form, and the properties of the curve to be proved or disproved by its aid. In integral calculus the classification of a derivative and its reduction to a certain form often make it possible to integrate immediately. This power of classifying was considered by one of the ques-

tions asked of the subjects of this inquiry. The question, like all the others, was made as concrete as possible, in this case by the addition of examples. It reads: Do you naturally classify or group (*e. g.*, notice the likenesses and differences of two declensions or of two botanical families)? The answers are summarized without reference to the distinctions, here entirely insignificant, between men and women and between algebraists and geometricians.

TABLE V

ABILITY TO CLASSIFY

	Like Mathematics		*Dislike Mathematics*		*Neutral*	*Total*
	Number	*Per cent*	*Number*	*Per cent*		
Classify.....	46	80.7	22	56.41	13	81
Do *not* classify	11	19.29	17	43.58	5	33
No reply	.....	.....	.....	.....	.....	3
Total.....	57	.....	39	.....	18	117

Of our subjects, therefore, there are one and one-half as many who naturally classify facts and relations, among the mathematicians, as among the others; while more than twice as many of the unmathematical confess themselves to be intellectually unsystematic. A more direct consideration of the reasoning ability makes clearer the distinction in thinking power between those who are fond of mathematics and the uninterested or hostile. The answer to the question "Do you reason out or remember a demonstration?" shows a marked difference between the two classes.

TABLE VI

REASONING POWER

a. *Comparison of men and women*

Subjects	*Wellesley*				*Harvard*				*Summary*				*Neutral*	*Total*
	Like Mathematics		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*			
	No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*		
Reason	34	82.92	11	37.93	15	100	2	28.57	49	87.50	13	36.11	13	74
Remember	7	17.07	18	62.06	1	6.66	3	42.85	8	14.28	21	58.33	4	32
Both	.....	.....	.....	.....	1	6.66	.....	.....	1	1.78	.....	.....	1	2
Doubtful	.....	.....	.....	.....	.....	.....	2	28.57	.....	.....	2	5.55	.....	2
No reply	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
Total	41	.....	29	.....	15	.....	7	.....	56	.....	36	.....	18	117

The mathematical among these subjects were therefore more than twice as likely as the others to reason out a demonstration and less than one-fourth as likely to memorize it. There appears here, quite in accordance with the traditional view, a difference (of 8 per cent) in favor of the reasoning power of the men. The exact figures, counting together mathematical, unmathematical, and neutral, are these:

b. *Totals of men and women*

Subjects	*Wellesley*		*Harvard*		*Total*
	Number	*Per cent*	*Number*	*Per cent*	
Reason	52	65	22	73.33	74
Remember	28	35	4	13.33	32
Both	.....	.....	2	6.66	2
Doubtful	.....	.....	2	6.66	2
No reply	.....	.....	.....	.....	7
Total	80	.....	30	.....	117

c. *Comparison of algebraists and geometricians*

Subjects	*Algebraists*		*Geometricians*		*Total*
	Number	*Per cent*	*Number*	*Per cent*	
Reason	23	46	35	70	58
Remember	27	54	15	30	42
Total	50	.....	50	.....	100

The contrast in favor of geometricians as compared with algebraists is much greater (70 per cent instead of 46) and confirms the suggestion that geometry is the more congenial to the true mathematician. Both differences reappear—the first more emphatically, the second less strongly—in the replies to the question: Do you readily supply intervening steps in a demonstration?

TABLE VII

READY INFERENCE OF INTERVENING STEPS IN DEMONSTRATION

a. *Comparison of men and women*

Intervening steps	*Wellesley*				*Harvard*				*Summary*				*Neutral*	*Total*
	Like Mathematics		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*		*Like Mathematics*		*Dislike Mathematics*			
	No.	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*	*No.*	*Per cent*		
Readily supplied	29	69.04	4	12.5	11	73.33	.....	.....	40	70.17	4	10.25	10	54
Not readily supplied	13	30.95	28	87.5	4	26.66	7	100	17	29.82	35	89.74	8	60
(No reply)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
Total	42	.....	32	.....	15	.....	7	.....	57	.....	39	.....	18	117

b. *Totals of men and women*

Intervening steps	*Wellesley*		*Harvard*		*Total*
	No.	*Per cent*	*No.*	*Per cent*	
Readily supplied	35	41.6	19	63.33	54
Not readily supplied	49	58.3	11	36.66	60
(No reply)	.....	.....	.....	.....	3
Total	84	.....	30	.....	117

c. *Comparison of algebraists and geometricians*

Intervening steps	*Algebraists*		*Geometricians*		*Total*
	No.	*Per cent*	*No.*	*Per cent*	
Readily supplied.....	17	34	20	40	37
Not readily supplied.....	33	66	30	60	63
Total.....	50	.....	50	.....	100

Several questions asked to discover, if possible, the intellectual preference of the mathematically inclined—whether for music or for painting and sculpture, for poetry or for prose, for science or for literature—do not lead to results conclusive enough for even tentative formulation. It is interesting, however, to observe that 76 per cent of the mathematical, as over against 48 per cent of those who dislike the subject, describe themselves as practical—that is, good "managers" or "planners."

Summing up the conclusions of the study, we find in general, in opposition to Mr. Huxley's assertion, that successful work in mathematics involves the possession, in greater or less degree, of every sort of intellectual ability. In particular, the conclusions are chiefly these:

1. Visual and articulatory images of numerals are most frequent.

2. Ease in memorizing is at least as common among the mathematical as among average students; but concrete memory is much more prominent than verbal.

3. Classifying and reasoning ability is much more strongly developed among the mathematical than among those who do not like mathematics.

4. Students who prefer geometry are more apt than those who prefer algebra to be mathematically inclined; they have rather less verbal memory and more strongly developed reasoning power.

5. No important distinctions have been noticed between the men and the women among our subjects, and this negative conclusion is of real significance, since the assertion of differ-

ence, especially with reference to mathematics, is so often made. In memory for long calculations, and in development of reasoning power, the proportion is slightly in favor of the men, but the figures are too small for positive conclusions.

B. Imagination of children as related to arithmetical taste and ability. By Elizabeth S. Adams.

The popular opinion that the imaginative child is not fond of arithmetic and that, conversely, an interest in arithmetic is a sign of a literal and prosaic temperament is an educational fallacy, responsible for many errors in the training of children. The results of a study of fifty children, between eight and eleven years of age, definitely contradict this assumption. The children were all in the third and fourth grades of a Massachusetts primary school and their arithmetic consisted of very elementary operations; long division and fractions were still strange and difficult. Yet even at this age, preferences manifest themselves, and it was found possible to divide the children according to grades of arithmetical excellence, and also according to their like or dislike for the study. To avoid asking them questions requiring an introspection which would have been artificial and difficult, their imaginative power was tested by the request to make up a little story about the sunflower and the rose; and by the following questions:

If you were a king or a queen, what would you do?

Like what does the wind seem to you to sound?

If the wind were a person, like what would it look?

The report which follows concerns itself chiefly with the answers to these questions. The tables distinguish children who possess imaginative ability from children who show a lack of it. Such answers to the first question as the prosaic statement, "I would rule the country," or the assertion that the wind, if a person, would "look like a man," are evidently literal and commonplace, while the replies, "I would sit on the throne and read," "I would give a large field to the boys to play ball," and the remark that the wind would look

"as if it wanted to play all the time," certainly suggest imaginative insight.

The relation between imagination and arithmetical ability is shown in the first table, in which the letters A, B, and C indicate grades of excellence:

TABLE I

IMAGINATION AS RELATED TO ARITHMETICAL ABILITY

Subjects	*A*		*B*		*C*		*Total*
	Number	*Per cent*	*Number*	*Per cent*	*Number*	*Per cent*	
Imaginative.....	16	72.72	16	76.19	3	42.85	35
Unimaginative.....	6	27.27	5	23.80	4	57.14	15
Total.....	22	.....	21	.....	7	.....	50

The per cents, not the numbers, furnish the basis for comparison, since the number of children in each class varies; the number of children with grade C is indeed too small to justify any comparison. Contrasting, then, only the A and B classes, it is evident that the imaginative ability is nearly the same, and that the results do not at all warrant the conclusion that the successful arithmetician is unimaginative.

A similar result follows from a comparison of the children who like arithmetic with those who dislike the study.

TABLE II

IMAGINATION AS RELATED TO ARITHMETICAL TASTE

Subjects	*Like arithmetic*		*Dislike arithmetic*		*Total*
	Number	*Per cent*	*Number*	*Per cent*	
Imaginative..	21	67.74	14	73.68	35
Unimaginative	10	32.25	5	26.31	15
Total	31	.....	19	.....	50

The proportion of the imaginative is thus slightly greater (73 : 67 per cent) among those who dislike arithmetic, in so far favoring the popular view; but the entire number of those who enjoy the study is so much the greater (31 to 19) that its

proportion of nearly three-fourths includes twenty-two children and is certainly sufficient to prove that a fondness for arithmetic is perfectly compatible with what is called a vivid imagination.

The study of the answers and of the stories of the children has been so suggestive that one or two of its general conclusions may be added. Of the thirty-three cases of imaginative answers to the king and queen question, twelve, only about one-third, are decidedly egoistic, including such statements as "I would have money enough," "I would do as I pleased," "I would travel and spend lots of money." On the other hand twenty-one answers are distinctly altruistic, like the proposal, already mentioned, "to give a ball-field to the boys." Other such answers are these:

"I would be kind to the poor as well to the rich."

"I wouldn't let them sell liquor."

"I would try to be generous, but not too generous, and rule wisely."

The answers to the questions about the wind show great diversity, progressing from association of an object to "focalized" association of a quality. The sound of the wind varies, to the childish imagination, from that of a whistle to "the sound of the waves breaking on the shore." And the wind, if a person, would look like "a man—an animal—a woman moaning—a scarecrow—a shadow," according to different authorities.

Of the twenty-five stories which were written, four only lack the element of personification. In all the rest the rose and the sunflower talk and quarrel. In two, the story is told, or begun, in the first person. Most of the little tales are adorned with morals, and a favorite one is the punishment of the discontented or boasting flower, which is picked and wilts. In one story the sunflower silences the rose, who claims the palm of beauty, by exclaiming, "I do not care. God made me as he thought best." In another story, called "About Even," the flowers amicably agree, after a recitation of their rival claims, that they are "about even, after all."

The truth is, of course, that imagination is the basis of every psychic process and, in some form or another, of all intellectual ability; that not only the artistic, but the scholarly or the practical child is imaginative, each in his different way; and that imagination in children is to be cherished, cultivated, and directed, but never repressed.

C. Rapid reading; advantage and methods. By Adelaide M. Abell.

The material of this study consists in a simple experiment upon forty-one members of a Wellesley psychology class, followed by a short series of questions on the methods of reading. The subjects were asked to read a short story at a definite time, not long before the meeting of the class, and to time the reading. They were not informed of the aim of the experiment. At the following class appointment they were directed to write out the story as nearly verbatim as possible. These reproductions were examined with reference to the following particulars: the percentage of words identical with those of the story, the percentage of thoughts omitted, and the percentage of thoughts imperfectly remembered.

The conclusions from the study are partly mere corroboration, partly, however, amplification, of the results of observation. In the first place, *people differ widely in the rapidity of reading*. The time recorded by the slowest reader on our list is more than six times that of the swiftest. But *people differ greatly* also *in the amount comprehended*. The reproduction in the case of this experiment is chiefly, it will be observed, a case of more or less accurate and detailed comprehension, for memory can affect the result but slightly, since the time between the reading and the writing was but a few hours.

The subjects omit from 20 to 80 per cent of the thought and render imperfectly from 3 to 40 per cent of the remainder.

Examining now the connection between rate of reading and degree of comprehension, it is found that *the majority of these subjects gain by relative slowness*, that is by a rate slower than their ordinary one. Evidently, however, this connection

between accuracy and relative slowness is no invariable one, for two subjects head the list both in rapidity and in comprehension, and they agree that except in cases where the matter is obscure, they grasp the thought more readily by rapid reading. Further, it is important to observe that *comprehension may be independent of the absolute rate of reading*, that is of the slowness or swiftness, comparing the ordinary rates of different individuals. This is evident, since of all three classes of readers—fast, moderate, and slow—some comprehend well and others fairly or poorly, as is shown by the table which follows, according to which moderate readers, not slow ones, comprehend most.

TABLE I

RELATION OF RATE TO COMPREHENSION

Per cent of thought omitted	*Rapid readers* (*Time: 2′ 30″, and less*)	*Moderate readers* (*Time: 2′ 31″ — 3′ 30″*)	*Slow readers* (*Time: 3′ 30″, and above*)	*Total*
Below 50 per cent.....	3=23.07 %	5=33.33 %	4=30.77 %	12
50 per cent.....	2=15.38 %	6=40 %	3=23.07 %	11
Above 50 per cent.....	8=61.53 %	4=26.66 %	6=46.15 %	18
Total.....	13	15	13	41

The reports of the individual subjects, from which the last table is compiled, clearly show this lack of any close connection between rate and accuracy. They are the following:

TABLE II

REPORT OF SUBJECTS WHO OMITTED LESS THAN 50 PER CENT OF THE THOUGHT

	Time	*Per cent omitted thought*	*Per cent imperfect thought*	*Per cent identical words*
Fast	1′ 40″	20	20	8
Fast	1′ 57″	30	3	8
Fast	2′ 10″	44	33	4
Moderate	2′ 35″	44	40	3
Moderate	2′ 45″	30	31	4
Moderate	3′	40	26	3
Moderate	3′	44	26	10
Moderate	3′	40	14	5
Slow	3′ 45″	22	20	8
Slow	4′	40	33	2
Slow	4′ 20″	44	22	2
Slow	5′ 14″	25	20	8

TABLE III

REPORT OF SUBJECTS WHO OMITTED 50 PER CENT OF THE THOUGHT

	Time	*Per cent omitted thought*	*Per cent imperfect thought*	*Per cent identical words*
Fast	2′	50	25	½
Fast	2′ 25″	50	26	1
Moderate	2′ 35″	51	18	2
Moderate	2′ 55″	49	26	2
Moderate	3′	51	14	2
Moderate	3′ 15″	50	26	1
Moderate	3′ 20″	50	20	2
Moderate	3′ 25″	50	25	2
Slow	4′	50	20	2
Slow	4′	50	26	3
Slow	4′	49	25	0

TABLE IV

REPORT OF SUBJECTS WHO OMITTED ABOVE 50 PER CENT OF THE THOUGHT

	Time	*Per cent omitted thought*	*Per cent imperfect thought*	*Per cent identical words*
Fast	1′ 40″	75	20	4
Fast	2′	52	11	4
Fast	2′ 10″	64	20	2
Fast	2′ 10″	75	14	2
Fast	2′ 16″	64	14	½
Fast	2′ 22″	64	14	½
Fast	2′ 25″	80	20	0
Fast	2′ 30″	52	17	2
Moderate	3′	64	20	½
Moderate	3′	64	20	1
Moderate	3′	75	26	0
Moderate	3′ 20″	75	17	2
Slow	3′ 34″	55	30	2
Slow	4′	64	17	1
Slow	4′	60	11	2
Slow	4′ 30″	75	20	5
Slow	5′	67	20	4
Slow	9′ 30″	60	20	2

Since, then, slowness of reading does not, in spite of common opinion, follow necessarily from closeness of comprehension, and since, obviously, much time is saved by rapidity, it becomes of importance to discover, if possible, the conditions and methods of swift reading. The fundamental condition of swift reading is undoubtedly quickness of association, so that any attempt to improve reading ability must include the effort to increase the rapidity of association by repeating and multiplying associations and by intensifying interest and attention.

Verbal memory is apparently an accompaniment, if not a condition, of rapid and accurate reading. This is shown by the following table, in which the per cent of identical words, though small in any case, is seen to be distinctly greatest among those who reproduce most closely.

TABLE V

RELATION OF VERBAL MEMORY TO ACCURACY OF COMPREHENSION

Per cent of omitted thought	*Number of subjects*	*Average per cent of omitted thought*	*Average per cent of partly remembered thought*	*Average per cent of identical words*
Below 50 per cent. ...	13	36	21	5.5
50 per cent.....	11	50	23	1.6
Above 50 per cent....	18[1]	69	19	2
Total.....	42			

A characteristic correlate, in the case of our subjects, of slow reading, is the actual pronunciation or the vivid articulatory imagination of the words read. This device, which may assist in the comprehension of a strange word or of an obscure meaning, is certainly a hindrance when it becomes habitual. The discouragement of a child's tendency to accompany reading by articulation is an evident pedagogical requirement.

Another peculiarity of the slow readers among our subjects is the reading a word at a time, while the rapid readers grasp phrases, clauses, sometimes even sentences, at a glance. It is evidently possible to apprehend almost simultaneously the words in a line, just as one reads by words instead of by letters.

In general the conclusion may be drawn that though every individual has probably his maximum rate of reading, determined by his natural quickness of apprehension and association, it is yet possible and desirable to some extent to increase the ordinary rate.

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[1] The record of the subject whose time was 9′ 30″ is not included.

VIII

DISCUSSIONS

THE HIGHER EDUCATION OF WOMEN IN THE SOUTH

Miss Mary V. Woodward's strictures on "Woman's education in the South"[1] may contain too much truth to allow of much criticism in general; but it would have been well if Miss Woodward had tried to get at the facts as they are in the year 1894, and had not contented herself with quoting from Klemm's Introduction to Helene Lange's *Education of Women in Europe*.

The reform in the higher education of women in the South, though slow, is really going on much faster than one would suppose from Miss Woodward's article, and it may be permissible to state here what is being done in several leading Southern universities and colleges which she does not mention.

It would not have been surprising perhaps if, before the summer of 1893, a Southern writer had been ignorant of the fact that at Vanderbilt University women had had for several years practically equal advantages with men; for until the catalogue for 1892–93 appeared no mention had been officially made of the privileges allowed women, nor had the names of women students appeared in the catalogue, although three had received degrees (one A. M. in 1880; one A. B. in 1891; one B. L. in 1892). The fact is that, from the founding of the university, young women were permitted to attend lectures in several courses, casually or regularly. For such attendance no fees were charged at first. Then one young lady, the daughter of a professor, obtained permission to attend regularly upon classes, first of the Professor of Greek, then of others, and, having finished with distinction all the courses required for A.M., was by a special vote of the Faculty, which was confirmed by the trustees, awarded the regular degree and diploma of the institution. This was in 1880, and since that time there have always been young women students at Vanderbilt.

The next step of the Faculty in this direction was to require the payment of fees from young women, viz., for one subject

[1] EDUCATIONAL REVIEW, VII: 466

$20, two $35, three or more $50. Such young lady students were not formally matriculated and did not pay the matriculation fee ($10), nor did their names appear in the catalogue. But they attended the same recitations, lectures, and examinations as other students, and had every other privilege of the university equally with male students, except perhaps that of competing for medals and honors. During all this time there were always perhaps from a dozen to twenty young women in attendance, a few being in regular degree courses, the majority special students. Finally in the catalogue for 1892–93 was published the following announcement:

"*Students by Courtesy*—Young women who are not less than sixteen years of age, and thoroughly prepared, will be admitted by courtesy to any of the courses of the Academic Department. They will be subjected to the same entrance examinations for the various courses, and to the same rules as to attendance and performance of duty, as young men. Though not formally matriculated, they will have the same privileges of instruction as young men; and on the completion of any full course leading to an Academic degree will be recommended by the Faculty for the same."

The fees are now the same as for young men, except that the matriculation fee is not charged.

In the catalogue for 1892–93 were printed also, in their appropriate classes, the names of all women students, and in that year a young woman received the A. M. degree for work in the department of graduate instruction. At the Commencement of 1894 still further progress was made. A young woman, who had fitted herself for college at one of the leading preparatory schools for boys in Tennessee and had taken a full four years' course in Vanderbilt, was awarded the degree of A. B. with brilliant distinction, and on the day of her graduation received the appointment to the Graduate Fellowship in Greek in Bryn Mawr College. Another young woman, of the junior class, who had taken the highest rank in chemistry, was awarded by vote of the Faculty the Owen prize medal for special excellence in that branch, and this vote was approved by the Trustees. Thus was settled the question that young women are eligible to all medals and honors of the institution, and coeducation at Vanderbilt is now a practical, though not a formally acknowledged, fact.

At the University of Tennessee, too, in June, 1893, the doors

were by vote of the Faculty thrown wide open to women, who were admitted in every respect on the same terms as men. The only restriction is that they must be at least seventeen years of age and must board and lodge at some place approved by the Dean. Many of the leading women of the city of Knoxville displayed a most commendable interest by uniting in an association to raise funds for a woman's building on the university grounds; and the young women justify the zeal manifested in their behalf, for it was announced at the recent Commencement that the highest honors in the junior, sophomore, and freshman classes had been won by young women.

The University of Alabama has also fallen into line, the last catalogue announcing that young women will be admitted to all the rights and privileges of the university on the following conditions: they must have attained the age of eighteen, and must be prepared to take up subjects of study not lower than those of the sophomore class. Those who finish one of the regular courses will be admitted to the Bachelor's degree; but those who prefer "may take a select course, on the completion of which they will be entitled to a certificate of proficiency and enrolled among the alumni." The young women must reside in private families, but rooms are provided for study hours at the university.

Tulane University has opened its graduate department to women, undergraduate instruction being given in the H. Sophie Newcomb Memorial College for Women, which is a department of the university. The catalogue for 1893–94 contains the following paragraph: "Graduates of the H. Sophie Newcomb Memorial College, or female graduates of other accredited colleges of the first grade who have received the degree of A. B. or B. S., may be admitted to the privileges of university instruction, and shall be entitled to the A. M. or a technical degree, upon the completion of a course of study equivalent to that required of male graduates." This year's catalogue contains among the twenty-one graduate students the names of five young women, all graduates of the H. Sophie Newcomb Memorial College.

At Cumberland University, Lebanon, Tenn., the Lebanon College for Young Ladies has just "become an annex to the university and the teaching will be largely done by the University Faculty. The classes will be all taught in the annex building, and there will be no mixing with the univer-

sity students." The young women not only get the advantage of the university teachers, but also, if they wish it, of the college course.

Not least significant in the movement is the state of affairs in the University of Virginia. For some time the subject of some form of coeducation has been agitated there, and those who are conservatively inclined probably feel that the question has been settled adversely to women by an overwhelming vote of the Faculty. And yet reformers have reason to be of good cheer, since in that most conservative institution six full professors, three of them graduates of the University of Virginia, including the Chairman of the Faculty, openly advocate the full admission of women.

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THE VALUE OF THE OFFICE-HOUR IN THE TEACHING OF RHETORIC

As the meaning of the word rhetoric changes gradually in practical application, a corresponding change is taking place in the relation of the instructor to the individual student. So long as rhetoric is mainly something to be learned out of a book, or from a course of lectures, students can be handled in masses; but in proportion as rhetoric becomes mainly something to be learned by practice, each student asserts himself separately. Neither in needs nor in aim can he be considered as just like his neighbor. Having been stimulated to work out his own style, he has a right to demand how that style is to be corrected or enriched; where is the secret of his failure, and where his best promise of success. Somebody else's style may be stimulating to him. Of style in general he may have some conception. These things have their value in lectures and class discussion. But his own style—that crude expression which he is licking into shape, that ambitious jargon in which he has a blind and honest pride—the class cannot reach that. If he is not to be left groping, he must have the privilege of private conversation. And if this *tête à tête* instruction is to have consecutive development and cumulative force, it must be as regular as the meetings of the class

and as frequent as the presentation of themes. This is the value of the office-hour.

Of course, some approach to the office-hour, or some makeshift for it, has always existed of necessity, wherever the curriculum has recognized rhetoric as of immediate practical value. Blackboard lists of errors, the reading of themes aloud before the class, marking by a careful system of signs, and the indorsement of a summary criticism, and best of all, the general privilege of consulting the instructor at a certain hour each week—each of these methods has its place. All together cannot take the place of twenty minutes alone with the instructor. When Freshman A knows that it is quite as important for him to call at the office on Friday at three as to hand in his essay on Thursday at ten; when Junior B looks forward to the Wednesday talks; when Senior C may get expert judgment on the plan and method of his graduation thesis, the old rhetoric is evidently possessed of a new spirit.

Frequent themes and, following immediately on each theme, a private conference with each student at an appointed time—such a system, in spite of the necessary increase in the staff, demands considerable devotion from the instructor. Theme-reading is a dangerously easy task when the reader is not obliged to account for his judgment to the student, nor to explain just what, in view of that judgment, the student ought to do. It is as dangerously easy as diagnosis might be, if one were never called upon to prescribe. But theme-reading is an absorbing matter when the reader proposes, as we have said, to give each man separately just the help he needs in solving the problem of his expression.

Some, indeed, have doubted if such an ideal could be realized. The realization, they contend, would require a degree of experience and culture never to be tied to the instructor's chair. Now of course the ideal theme-reader does not exist any more than the ideal physician. And of course also, in proportion as a man approaches that ideal in either profession, he is inclined to hold aloof from drudgery and to set a price on his time that narrows very closely the range of his personal contact. But there is always work of high usefulness for the ordinary practitioner. The comparison is not fanciful. In both cases the main thing is special training. To begin practice, the theme-reader, like the physician, needs in addition common sense,

real touch with the world outside his study, patience, adaptability. The rest comes with experience.

Unfortunately, special training has not long been available for the theme-reader. He has often acquired his skill altogether by experience. And though experience may have broadened his appreciation and sharpened his judgment, it may also have left him narrow and unsure. Those men have gotten their training most surely and directly who have had the freedom, or, better still, some of the extra work, of a well organized English department, such as that at Harvard. Harvard, indeed, has been hitherto the principal, almost the only, training school. But the demand for theme-readers is so evidently destined soon to exceed Harvard's power to supply, that tentative efforts in the same direction at several other colleges will doubtless ripen into definite courses. Meantime Columbia announces a seminar for practical work in the teaching of rhetoric and the handling of essays. This course proposes to give systematically the training that has too often been picked up incidentally and at the expense of the Freshman class.

With his special training, then, however acquired, what can a man of fair culture, open mind, and a gift for the work, do for the individual student? What more can he do than is done without the office-hour? Instructors that have adopted regular office-hours for Freshmen, after struggling some years without that help, know that the elementary work cannot be done so thoroughly nor so rapidly in any other way. To take a single instance, the office hour strikes immediately at shirks and laggards, and sets backward students at the work they severally need to make good their deficiencies. And as the work advances in the Sophomore year, and the process of differentiation in the class becomes more and more marked, the office-hour increases in value. A must learn to see before he can describe; B goes away hugging the discovery that his story would be really good if he cut it off at the climax; C maintains the logic of his argument, but finds out why he habitually spoils a good case. These are average men of the sort that under the old system would yawn through a course of lectures, present a meaningless compilation three or four times a term, and never write again until the graduation thesis reduced them to fumbling perplexity.

Office-hours this afternoon call for the discussion of a Freshman's ideas on football, and three Junior essays. The Fresh-

man needs to learn practically the difference between his loose co-ordinations and the proper subordination of a logical sentence—just that for this time. There are college graduates who have passed beyond the possibility of learning that, and others on whom it has dawned after a deal of misspent labor. The Junior essays are on "The Character of Admetus in the *Alcestis* of Euripides," on "The advisability of spelling reform," on "The political system of Prince Metternich." The instructor that pretended to any deep knowledge of all these subjects would deserve to be exposed—as he undoubtedly would be—by his students. The sort of criticism that the experience of a theme-reader has achieved is in substance as follows:

The first essay reveals an unsuspected talent for literary criticism. Discussion of this must go straight to the old Euripides here on the table. Will line 450 bear that interpretation? Is not this conception unique in Greek tragedy? This Junior is the sort of man to bear praise for the excellence of the method he has hit upon. Number 2 is crushed under his authorities. He has amassed a body of information worthy to set before a Congressional committee, and he has struggled with it in vain. A tedious job to work through it with him until he sees how to handle it; but for him the service may be worth all the lectures in the term. Number 3 evidently learned that lesson last time. He even shows some skill in getting the essence of his books. But in composition he still proceeds merely by a series of topics, not yet by a series of propositions. He should go to Burke.

If the office-hour can do these things for the student, then it tends more promptly and directly than any class work to help him find out and bring out what is in him. It demonstrates afresh that rhetoric, where its opportunities are realized, may, taught practically, become the summary of the whole curriculum.

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PROFESSOR KELSEY ON THE HIGH-SCHOOL LATIN TEACHER

Professor Kelsey, in his article on "Latin in the high school" in the June number of the EDUCATIONAL REVIEW,[1] writing of "those who never were competent to teach the subject, and probably never will be," says: "We should ridicule a teacher of English who proposed to teach Milton without having read him through; what shall we say to [of?] teachers of Cæsar who have read only the four books of the *Gallic War*, and have never even seen a text of the *Civil War?* What should we think of a Sunday-school teacher who would conduct a class with only a scrap of the Bible in his possession? How then about the teacher of Cicero who has not at hand the text of his complete works for cross-reference?"

From this it seems that in Professor Kelsey's opinion no one is competent to teach the first four books of Cæsar's *Gallic War* unless he has "read him through." Every thorough scholar will heartily indorse his appeal for better scholarship among teachers of Latin; but is not the above demand unreasonable?

In passing upon its reasonableness, it is necessary to consider two points: First, must the teacher read the last books of the *Gallic War*, and the *Civil War* besides, in order to gain a thorough, scholarly knowledge of Latin grammar and of the Latin, more especially of Cæsar's, vocabulary? Second, is this extra reading necessary for the understanding of the matter of the first four books?

The answer to the first question must be a decided "No," In striking contrast with Professer Kelsey's opinion is the opinion of George Long, contained in the preface to his edition of the *Cato Major* and quoted with approval by the Latin Conference of the Committee of Ten: "This small treatise alone, if thoroughly mastered, . . . would make a good Latin scholar." In the words "thoroughly mastered" lies the gist of the matter. It is not the amount of one's reading but its thoroughness that tells for the making of a good scholar. There seems to be small room for doubt that the thorough study of the first four books of Cæsar's *Gallic War* will make one a master of Cæsar's Latinity at least.

As to the second question, the books of the *Gallic War* are tolerably complete in themselves and the last books are not

[1] VII: 25

necessary for the comprehension of the first. And the *Gallic War* is independent of the *Civil War*. Besides, no matter how full the teacher might be of the facts of the *Gallic* and *Civil Wars* he ought to keep his knowledge largely to himself, for his pupils will have enough to do to master Cæsar's syntax and vocabulary, without being bothered with information which is of questionable value at best, especially in the case of the *Gallic War*.

On the whole there seems to be no sufficient reason why one should not be a good teacher of the first four books of the *Gallic War* who has read only those books and has never seen a text of the *Civil War*.

Substantially the same arguments apply to the case of the teacher of Cicero "who has not at hand the text of his complete works for cross-reference"—small good would it do his pupils if he had—and we reach the same conclusion.

Professor Kelsey's incidental condemnation of the teacher of Milton who has not "read him through" seems no more sensible. The teacher might get a modicum of increase in general power from laboriously wading through the whole twelve books of *Paradise Lost*. But his success in teaching the first two books would be but slightly affected by that wearisome process. And it is possible to conceive of a thoroughly good Sunday-school teacher to whom a large part of the Old Testament was wholly unknown.

I do not wish to condemn extensive outside reading. Let the teacher do as much of it as he has time and strength for. If done properly it will do him good. But I wish to emphasize the fact that there is no saving virtue in much reading alone, and to defend from the charge that "they never were competent to teach the subject, and probably never will be," those good teachers of Cæsar (*in esse* or *in posse*) "who have read only the four books of the *Gallic War* and have never even seen a text of the *Civil War*" and those good teachers of Cicero who have "not at hand the text of his complete works for cross-reference." Meeting Professor Kelsey's demand will not necessarily make a good teacher nor will the failure to meet it necessarily result in a poor teacher.

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IX

REVIEWS

Smith's Classical Dictionary of Greek and Roman Biography, Mythology, and Geography. Revised edition. London: John Murray; New York: D. Appleton & Co., 1894. 1019 p. Price $6.00.

It is probable that the various classical dictionaries of the late Sir William Smith have enjoyed a circulation such as no similar publications have ever known. In England, since 1850, they have been practically the only ones in use at the universities and also in the public and private schools; the same thing has been true in the British Colonies; while in the United States, these works, as revised and augmented by Professors Anthon and Drisler of Columbia College, have had an absolute monopoly. Sir William Smith's own scholarship never reached anything more than a respectable mediocrity, and as a writer of English his productions occasionally approached the limits of absurdity; but he had the true editorial instinct, and by his long connection with the *Quarterly Review* gained a very wide acquaintance among scholars and men of letters which enabled him to command the services of the more eminent English classicists of the century. Hence the books that bear his name have had a most remarkable vogue, and have by their sound scholarship and practical utility won a unique position in the world of school and college.

Of the whole series, the *Classical Dictionary* in one volume has, by reason of its convenient size and general comprehensiveness, been the most popular and the widest known. For this reason, a new and revised edition of it—the first since 1852—is entitled to especial consideration and will be received with general interest. While it bears Sir William Smith's name upon the title-page, the work of revision has been wholly done by Mr. G. E. Marindin, formerly of King's College, Cambridge, and lately associated with Mr. Wayte as the reviser of the great *Dictionary of Antiquities*. Mr. Marindin's aim has been to incorporate into the new volume all the important changes and additions made necessary by the unprecedented advances recorded in every department of classical

study during the past thirty years, while not adding materially to the size of the original volume. The task was certainly a heavy one, and perhaps it has been discharged as well as could reasonably have been expected without giving more time than has evidently been bestowed upon it, or without calling in the services of more than a single editor. The most obvious criticism that will be passed upon the book is the very apparent lack of method in the work of the reviser. Mr. Marindin might have revised every article, or he might have revised only the longer and more important ones; but neither of these plans appears to have been adopted. Some long articles are carefully done over and some equally antiquated ones are not touched at all, or only imperfectly corrected; some short ones are revised, and some are not. The impression that one receives is that Mr. Marindin read the book over and made merely such corrections as his own general knowledge happened to suggest, leaving many things untouched and uncorrected. Thus, dipping into its pages, under "Ægyptus," we find mention of Mr. Petrie's discoveries; but under "Etruria," the remarkable find of Professor Krall is practically passed over. Tiryns and Mycenæ are well treated, but under "Gortyn" no notice is given of the Gortynian tables. The newly found treatise of Aristotle, the idyls of Herondas, and the Revillout papyri of Hyperides are duly recorded, but the *Antiope* of Euripides is overlooked. The temple of Athene at Ægina is still called "the temple of Zeus Panhellenius," though archæologists have long ago discarded this erroneous appellation. Mr. Marindin's notice of Lake Copaïs seems to indicate that he has not heard of the draining operations of 1886, which recovered some sixty thousand acres from the water. In enumerating the various attempts to cut the Corinthian Isthmus, no allusion is made to the successful completion of the work in 1893. Mr. Petrie's remarkable discoveries at Coptos, which have brought to light works of Egyptian art antedating any before known to exist, are not even alluded to. The date of the capture of Rome by the Gauls is still given as 390 B. C. in defiance of Mommsen and other chronologists. The legend under the illustration of Julia, the daughter of Augustus, gives the date of her death as A. D. 29, while the text of the article gives it as fifteen years earlier. It seems odd, in view of the importance now given by all students of the classical languages to the Italic dialects,

to find the articles "Osci" and "Umbria," adding nothing to what was published in 1850. But they move slowly in England—a fact evidenced by Mr. Marindin's still using such forms as θνήσκω without the subscribed iota.

The most seriously uneven treatment is found in the revision of the bibliography. As in the old edition, bibliographical references are given only in the articles on ancient authors, though the student would be no less interested and aided by a list of the latest works on Egypt, Etruria, Greece, Rome, Carthage, and other important countries and cities. But at any rate, he has a right to expect the latest information regarding editions of classic authors. Nevertheless, Mr. Marindin here disappoints him. The great writers are very well treated, but in the case of the others, the editor appears to have no system. Thus, for the text of the grammarians, Keil seems to be ignored altogether, and the student put off with a reference to old Putsch's work of the year 1605; or as in the case of Dionysius Thrax, with a reference to Bekker, with not even a mention of Uhlig's edition of 1884 with its fine prolegomena. Errors of date are not infrequent, and the references have not been verified.

There are a few omissions that deserve notice. The book has no article on Commodianus, though his work has considerable linguistic and literary interest. There are also none on Comus, Copia, Corippus, Nana and other less important topics.

On the whole, the revision can hardly be pronounced a satisfactory one, judged by the standards of the day. It is true that it is intended primarily for the undergraduate; but the undergraduate of 1894 needs a far different book from that which was sufficient for the undergraduate of 1850. The standard of classical learning is not only higher, but it is applied to lines of study that were undeveloped forty years ago. Fewer persons study Greek and Latin now than in 1850, but they study them far more scientifically and comprehensively: and they bring to bear upon their work information from new and prolific sources. Biography and geography and mythology comprise to-day the lesser part of a classical student's collateral information. He must know something of epigraphy, of comparative philology, and of art.

The volume is embellished with a great number of cuts, mostly old. Such as are new are, in general, poorly done, being blurred and imperfect; but perhaps this is due to the quality of the paper. The type and size of page are the same

as in the old edition; hence the book still remains convenient to use, but somewhat trying to the eyesight.

HARRY THURSTON PECK

COLUMBIA COLLEGE

Classical Studies in Honour of Henry Drisler. New York: Columbia University Press. (Macmillan & Co.), 1894. 310 p. Price $4.00.

Entirely apart from the special interest which its contents possess for the student of the classics, the publication of this handsomely printed volume has some features that are of general significance. It gives evidence, for one thing, of the Germanization of our classical scholars, not only in their methods of research and the other weightier matters of the law, but also in the minor points of academic custom and tradition. In Germany it has long been the practice for the friends and former pupils of a distinguished scholar to celebrate some epoch of his career by the publication in his honor of a collection of scientific monographs relating to the special subjects in which his life-work has been spent and his reputation won. The occasion chosen for this tribute is usually the anniversary of his entrance upon the doctorate—the twenty-fifth, or the fiftieth, the latter being specifically regarded as the *Jubiläum*. Occasionally, however, a birthday is thus selected for commemoration, as in Mommsen's case, some years ago. Many of the monographs written for these *Festschriften* have been treatises of great value as embodying hitherto unpublished results of original research, and have remained monuments more enduring than brass to the memory of the great scholars in whose honor they first saw the light.

The last two decades have seen some unusually notable publications of this class. Not to give the list in full, it will suffice to mention, as the most recent, the volume dedicated in 1883 to Professor Usener of Bonn on the twenty-fifth anniversary of his doctorate; that to Professor Otto von Böhtlingk, the collaborator with Roth on the great Petersburg lexicon of Sanskrit, the occasion being the fiftieth anniversary (1888); that to Professor Studemund in 1889; and last year, that to Professor Rudolph Roth. The most imposing *Festschrift*, however, that the present writer can recall, is the *Commentationes in Honorem Theodori Mommseni*, which surpasses in size and in the number of its contributors all other

similar works, as the remarkable man whom it is designed to honor towers above all other classical scholars past and present. It appeared in 1877 in commemoration of the historian's sixtieth birthday and is a quarto volume of some 825 pages, closely printed. Its contributors include not Germans alone, but Frenchmen, Austrians, Italians, Danes, Russians, and English—in all 78 in number—among them the distinguished names of Bernays, Bücheler, E. Curtius, Fiorelli, Halm, Hübner, Kaibel, Kekulé, Kiessling, Lanciani, Marquardt, Oldenberg, De Rossi, Usener, Vahlen, Wölfflin and Zangemeister. The papers in the Mommsen volume are written some in Latin, others in German, Italian, French, and English.

So far as the writer knows, the work that has just appeared from the new Columbia University Press—the first to be issued by that organization—is the only one of the kind yet published in honor of an English-speaking scholar. To be the recipient of so unusual a compliment is indeed a unique experience; and it is one that few have so well deserved as the venerable Dr. Drisler, who has just completed his fiftieth year of service as Jay Professor of the Greek Language and Literature in Columbia College, and who now retires from active duty with the title of Professor Emeritus. Contrary to the usual custom in Germany, the contributors to the *Classical Studies* have been restricted to his own former pupils—an arrangement which shortens the list, but which gives to the book a greater personal interest. The writers number nineteen, and the institutions of learning represented are Columbia College, Barnard College, the University of Pennsylvania, Bryn Mawr College, the University of Nebraska, the Sachs Classical School, and Princeton University. The papers range in length from two pages to forty-six pages, and each deals with some special topic related to the study of classical antiquity, the scope of the whole being one of surprising variety,—linguistic, archæological, epigraphical, historical, philosophical, exegetical, critical, and literary. An admirable portrait of Professor Drisler with his autograph embellishes the frontispiece; and the text is adequately illustrated by ten plates, some of which have not before been published.

This collection of monographs is particularly instructive as practically illustrating the economic principle of the division of labor applied to scholarly pursuits. The stock charge that

has been brought against the intense and minute specialization of the present day is that specialists in their devotion, each to his own limited field of research, lose their sense of perspective, despise the equally important labors of their fellow-specialists, and come to feel that the part is greater than the whole. Such a volume as the present affords a practical and ample refutation of such a view. Here we see investigators in many different fields of study not only using in their own work the garnered results of other specialists; but ably and effectively throwing upon the problems of other workers the special knowledge that their own research has enabled them to give. Thus we find here the archæologist enlightening the artist, the philologist instructing the historian, the philosopher and psychologist elucidating the problems set before the exegete. More than this, the specialist in Semitic furnishes valuable information for the student of Avestan; the investigator in Iranian literature puts his elaborate researches at the disposal of the student of Greek. Romance philosophy applies the comparative method to the study of the ancient drama, and the same thing is very strikingly and cleverly done by the critic of modern dramatic literature. In short, here, as in a microcosm, is shown in concrete form the enormous value of specialization as it is now understood; and here we find illustrated with a clearness and certainty that are almost startling, the absolutely inseparable unity of the whole field of human knowledge. It is a demonstration that cannot be too often made, and which can seldom be more impressively set forth than here.

The appearance of the volume is unusually attractive and reflects credit upon the Columbia University Press, whose work of publication is thus so appropriately and so auspiciously begun.

HARRY THURSTON PECK

COLUMBIA COLLEGE

University of the State of New York: 107th Annual report of the Regents. Albany: University of the State of New York, 1894. 2 vols., 1589 p.

The indispensable reports on higher education in this country are not very numerous. Indeed, for some years past—since President Barnard's death—the annual reports of Presidents Eliot and Gilman and that of the Commissioner of Education have been the only ones in which carefully tabulated and ana-

lyzed statistics are accompanied by the broad and free discussion of pressing problems and current tendencies on a plane that raises them above merely temporary or local interest. Hereafter the reports of the University of the State of New York must be added to the list, for their ample statistics, multiform records, and full discussion are in all respects admirable. In one very important respect, that of typography and form, the volumes under discussion are unequaled. Their capitalization, punctuation, spelling, and use of type are worthy of imitation by all public officers who aim to make their documents attractive and to convey their meaning, content, and subdivisions in the simplest way.

Secretary Dewey's report itself occupies 317 pages, and anyone not acquainted with the scope and activity of the University will be surprised at the variety and far-reaching importance of the topics treated. Administrative officers generally, whether in charge of educational work or not, will find much to interest and instruct them in Mr. Dewey's recital of the details of his administrative system and his proof of its efficiency. A history of the academic fund leads up to a critical discussion of the various modes of apportionment. Much may be said here, as in England, to disparage the system of "payment by results," but it is very difficult, if not impossible, as Mr. Dewey shows fairly, to propose a less objectionable substitute. The suggestion that the academic apportionment be supplemented by a small grant for scholarships in aid of deserving students who are fitted for more advanced or special work, deserves attention, as it is susceptible of developing into a very important part of the University's policy.

To go through the entire report, and call attention to its most striking features, is unnecessary after what has been said; all competent students of higher education will study it entire; but it may be pointed out that no other single force in this country is doing so much to raise the standard of education by inspection and *action based thereon*, to bring up the deplorably low terms of admission to the practice of law and medicine, and to help on the differentiation of university from college, as the executive department of the University of the State of New York. If this praise be thought extravagant, the doubter is referred to the record of action taken in a single year, as stated in these volumes.

N. M. B.

Williams College, 1793–1893: a record of the commemoration, October 8–10, 1893, on the centennial anniversary of the founding of Williams College. Cambridge: John Wilson & Sons, 1894. 330 p.

This superb volume is another reminder that, educationally, we are growing to manhood. Williams is not, perhaps, identified in the public mind with the oldest of American colleges, yet its first century's course has been run and—though no commemoration exercises were needed to convince us of it—nobly run. A typical American college, with no possibility of sinking into an academy, and no ambition to ape an university—and, it may be added, with no intention of being identified with a *Gymnasium*—Williams stands pre-eminently for those forces so well-known and so uplifting in American life, the forces that work for law and order, for religion and morality, for intelligence and enterprise. It has been a training school for hundreds of teachers and clergymen, and through them has carried its ideals and its methods to all parts of the world. The name of Mark Hopkins of course overshadows those of its other eminent teachers, and tribute was gladly and lovingly paid to his memory at every stage of the commemoration.

One feature of the exercises was unique, and to readers of this REVIEW, especially interesting. Distinguished alumni, identified with the work of education, held a conference on educational topics that was significant in more ways than one. Few of the smaller colleges could summon so many alumni from teaching positions of the first rank, and few conferences on education are so marked by common sense. The papers read were, "The relation of the secondary school to the college," by Dean H. P. Judson of the University of Chicago; "The relation of the college to pedagogics," by Principal J. C. Greenough of the Westfield (Mass.) State Normal School; "The relation of the colleges to the professional schools," by Dean E. H. Griffin of Johns Hopkins University; "The promotion of education by the college through a connection with the common school system and by university extension," by Chancellor F. H. Snow of the University of Kansas; "College and university in the United States,"[1] by Professor Charles Gross of Harvard University; and an address was delivered by President G. Stanley Hall of Clark University. Wide infor-

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mation, vigorous thinking, and a keen sense of the necessity of practical efforts characterized these contributions.

The report of this conference gives this volume general interest, but alumni and friends of Williams will prize it highly for its other features, not the least of which is an unconcealed pride in the history and achievements of the old College.

N. M. B.

THE EDUCATIONAL LABORS OF HENRY BARNARD—By WILL S. MONROE. Syracuse, N. Y.: C. W. Bardeen, 1894, pp. 35. Price 50 cents.

To the present generation the name of Henry Barnard is familiar enough, but any accurate knowledge of what he actually accomplished in behalf of American education is usually lacking. Mr. Monroe has told the story here very succinctly, and his little essay explains why Mr. Barnard's name will always be remembered in the history of the development of the school system of this country.

THE HISTORY OF EDUCATIONAL JOURNALISM IN THE STATE OF NEW YORK—By C. W. BARDEEN. Syracuse, N. Y.: C. W. Bardeen, 1893, pp. 45. Price 25 cents.

This is the paper read by the author before the Department of Educational Publications of the International Congresses of Education at Chicago. Probably no other person in the State of New York possessed the knowledge and the records necessary to write it. It is both full and accurate. It is perhaps to be regretted that the limitations imposed by the circumstances under which the paper was read did not allow the author to express frankly his opinion of the injury done to the highest educational interests by some of the publications whose existence he records.

N. M. B.

X

EDITORIAL

At the time that this number of the REVIEW goes to the press the Constitutional Convention of the State of New York has not taken the final vote upon the educational article. Comment on the proposed amendment and on the steps leading up to its formulation is, therefore, deferred until next month.

The third of the great summer meetings of teachers—the National Educational Association and the American Institute of Instruction having been summarized last month—is the University Convocation of the State of New York. This was held on July 5–7, in the senate chamber at Albany, as usual. The attendance was the largest yet recorded, 391 names being written in the register. The programme fell into three parts or divisions: the relation of the State toward education, the Report of the Committee of Ten, and annual reports on specific topics. The latter were as a rule brief, succinct statements of fact, and make very interesting reading as they appear in the published report of the meeting. The feature is an excellent one, and it is to be hoped that it will always be continued.

The discussion of the Committee of Ten's Report preceded by a few days that in the National Council of Education, and was very helpful. Superintendent Kennedy of Batavia set the ball a-rolling in an able and elaborate paper, in the main highly eulogistic. He made the mistake, however, that not a few others have made, of supposing that the Report was to be a systematic treatise on pedagogics, and therefore is led to regret "the failure to discuss the comparative educational value of subjects." That, of course, is *the* crucial question at the moment in all grades of educational work; but the Committee of Ten were charged with quite a different and a much more limited task than the one involved in that question. One regrets, moreover, to find so clear a thinker as Mr. Kennedy pleading to have elementary studies made unnecessarily diffi-

cult in order to be efficient. Mr. John S. Clark of Boston followed up his paper in this REVIEW[1] with an urgent demand that the secondary school curriculum, as conceived by the Committee of Ten, be extended to include art as an integral subject. President Stanley Hall contributed, among some excellent suggestions, an exceedingly crude and dangerous opinion as to the methods and manner of religious instruction in elementary education. He followed Mr. Kennedy in regretting that the Committee of Ten had not wrestled with the fundamental positions of educational theory. One is forced to wonder what these same gentlemen would have said if the Committee of Ten *had* prepared an encyclopedia of education. President Baker of Colorado and Principal Robinson of Albany, both members of the Committee of Ten, talked more to the point, and the great authority of Professor Wheeler of Cornell was given to the Committee's proposition that enough Greek to satisfy college entrance requirements, and to "yield a form of completeness in itself," can be taught in two years—a fact, of course, to which hundreds of students bear witness every June. The up-shot of the whole discussion was, as usual, that the Committee's report was not very much injured, while many admirable suggestions on matters of detail were thrown out.

The relation of the State to education was a topic of peculiar importance, for the Constitutional Convention was in session at the time. The presence of Presidents Canfield, Baker, and Adams of the Universities of Nebraska, Colorado, and Wisconsin, was fortunate, for it enabled the Convocation to hear some plain truths as to the existing policy of great American commonwealths toward education, particularly higher education. While the East is theorizing the West has acted, and acted wisely.

During the discussion the following resolutions, addressed to the Constitutional Convention, were introduced by the veteran Principal King of Fort Edward and passed unanimously with great enthusiasm:

1. That in rewriting the constitution the regents shall be duly recognized as a constituent part of the organic structure of the commonwealth, the manner of the election of their successors, the tenure of their office, and their compensation being prescribed, and their powers, prerogatives, and duties being defined.

2. That among the powers and duties of the board of

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regents shall be the election of the superintendent of public instruction of the State.

A matter of great importance at Convocation was the announcement of the first board of university examiners. This board, chosen from the faculties of institutions within the University of the State of New York, is to have important duties in connection with higher examinations and courses of study leading thereto. The examiners for 1894–96 are:

Philosophy:
Pres. J. G. Schurman, Cornell
Pres. David J. Hill, Rochester

Psychology:
Prof. J. McK. Cattell, Columbia
Prof. E. B. Titchener, Cornell

Economics:
Prof. E. R. A. Seligman, Columbia
Prof. H. E. Mills, Vassar

Sociology:
Prof. J. W. Jenks, Cornell
Prof. F. H. Giddings, Columbia

Education:
Prof. Nicholas Murray Butler, Columbia
Pres. William J. Milne, State Normal College

Library science:
J. N. Larned, Buffalo library
Miss Mary S. Cutler, Vice-director N. Y. State Library school

Mathematics:
Prof. J. M. Taylor, Colgate
Prof. Oren Root, Hamilton

Astronomy:
Prof. Hamilton L. Smith, Hobart
Prof. Mary W. Whitney, Vassar

Physics:
Prof. Edward B. Nichols, Cornell
Prof. Eugene Haanel, Syracuse

Chemistry:
Prof. S. A. Lattimore, Rochester
Prof. Maurice Perkins, Union

Geology:
Prof. J. J. Stevenson, University of the City of New York
Prof. William B. Dwight, Vassar

Botany:
Charles H. Peck, University of the State of New York
Dr. Emily Gregory, Barnard College

Biology:
Prof. H. F. Osborn, Columbia
Prof. Burt G. Wilder, Cornell

Engineering:
Director Palmer C. Ricketts, Rensselaer Polytechnic Institute
Prof. R. H. Thurston, Cornell

Architecture:
Prof. William L. Ware, Columbia
Prof. Charles Babcock, Cornell

History:
Prof. W. H. Mace, Syracuse
Prof. Lucy M. Salmon. Vassar

English language:
Prof. T. R. Price, Columbia
Prof. O. F. Emerson, Cornell

English literature:
Prof. Francis H. Stoddard, University of the City of New York
Prof. Joseph H. Gilmore, Rochester

Rhetoric and composition:
Prof. George R. Carpenter, Columbia
Prof. Brainard Smith, Hamilton

German:
Prof. H. C. G. Brandt, Hamilton
Prof. Horatio S. White, Cornell

French, Italian, and Spanish:
Prof. Adolphe Cohn, Columbia
Prof. T. Frederick Crane, Cornell

Latin:
Prof. C. E. Bennett, Cornell
Prof. A. G. Hopkins, Hamilton

Greek:
Prof. B. I. Wheeler, Cornell
Dean N. Lloyd Andrews, Colgate

Oriental languages:
Prof. Richard Gottheil, Columbia
Prof. Sylvester Burnham, Colgate

By the appointment of an Advisory Committee on education, the present reform administration of Brooklyn, under the leadership of Mayor Schieren, has taken the first step toward a reorganization of the public-school system of that city. The committee consists of the following gentlemen: Truman J. Backus, David H. Cochran, Charles H. Levermore, J. Edward Swanstrom, William Harkness, John C. Kelley, and John K. Creevey. Dr. Backus is president of the Packer Institute, Dr. Cochran is president of the Polytechnic Institute, and Dr. Levermore is principal of the Adelphi Academy. These three gentlemen, all of them connected with private educational institutions, represent the scholastic element in the committee, though only one of them, Dr. Cochran, has had any experience in public-school work. Mr. Swanstrom and Mr. Creevey are lawyers. The former is the president of the board of education and represents the progessive non-political element in that body; while the latter was formerly a member who made himself conspicuous by the earnestness with which he advocated wise measures of reform. Mr. Harkness and Mr. Kelley are also ex-members of the board, who labored earnestly and intelligently to promote the best interests of the public schools. Upon the whole, the composition of the committee promises well, and is highly satisfactory to the friends of public education.

The task assigned to this "advisory committee" is not an easy one. Brooklyn, in its educational system, still retains many characteristics of a village. There is a central board of forty-five members, who are subdivided into local committees of three for each school. The local committee appoints the teachers and is clothed with most of the powers conferred upon the trustees of a rural school. This is a system which has been done away with in every other progressive community. It may be fairly assumed, therefore, that the first task to which the advisory committee will devote itself will be the framing of a new constitution for the board of education and the devising of a method of appointing teachers that will secure zeal and efficiency in the teaching corps and obliterate the abuses of personal favoritism and political influence. Another matter to which the committee should address itself is the establishment of some means of getting rid of inefficient teachers. While it would not be true to say that no inefficient teachers have been discharged during the last ten years, yet it is a fact that

the number has been so very small as not to produce any appreciable effect on the teaching force. If Mr. Rice's dictum, that one of the marks of a progressive school system is the ease with which it discards inefficient teachers, is correct, then the Brooklyn school system must be at a very low ebb, because, except in cases of flagrant immorality, it is almost impossible to secure the discharge of a teacher on the ground of inefficiency.

Under the system of school administration which has prevailed in Brooklyn since 1848, there is a general lack of responsibility. The board of education cannot be held responsible for the deeds of its local committees, for it has become an unwritten law that whatever is done by one local committee shall be approved by all other local committees, that is, by the board of education. Neither superintendent nor principals can be held responsible for the work of teachers in whose appointment they have no voice. If the "advisory committee" can devise some scheme by which responsibility for each line of school work shall be definitely determined, it will confer incalculable benefit on the city of Brooklyn. It is not disputed that many important reforms have been accomplished during the past ten years; but these reforms have, owing to the constitution of the administrative system, come very slowly, and have required an expenditure of energy out of all proportion to the benefits accomplished.

Among the reforms referred to above may be mentioned the introduction of science teaching and physical culture, the establishment of high and manual-training schools and a training school for teachers, and the elimination of stated examinations as tests for promotion, while a beginning has been made in kindergarten work. But Brooklyn is the most conservative of cities. Each of the measures referred to was carried only after overcoming the most determined opposition both within and without the board of education. It is highly significant of the backward condition of public sentiment on educational matters in that vast community that, in the present day and generation, the Mayor of the city should ask his "advisory committee" to report on the advisability of retaining the kindergarten and manual-training features of the public-school system.

The Ohio College Association at its last meeting in Delaware, O., took important action in reference to several matters. It was recommended that the M. A. degree be given (1) for one year's residence, involving work equivalent to fifteen hours a week, and a thesis, (2) for work done *in absentia* for not less than two years, and a thesis, (3) for three years' professional study. The first two recommendations were passed unanimously, the last by a majority vote. It was recommended that the Ph. D. degree be given a candidate, having an undergraduate degree, only after two years' residence. He must have one major and two minor subjects. One minor must be the history of philosophy. He must before the final examinations present a thesis involving original work. If the thesis is accepted, and the examinations successfully passed, the thesis must be printed, bearing the names of the professors who accepted it, and distributed among the colleges and universities. It is emphasized that all candidates should have a reading knowledge of French and German, although this is not made a *sine qua non*. This subject of the Ph. D. degree will come up again next year, after the different colleges have reported upon these recommendations.

A resolution was passed unanimously that boards of education or of trustees which appoint to positions in the high schools be earnestly urged that hereafter in making new appointments they select in so far as is practicable only graduates of some reputable college or university, that all such boards in the State, also the superintendents and principals of high schools be notified of their action, and furthermore that the college associations of other States be urged to take similar action.

The Summer School of Applied Ethics at Plymouth devoted a part of each of its sessions—one hour every morning and three evenings—during the week August 6–11 to a Conference on the relations of education to ethics. Nothing could have afforded a better illustration of the great interest thinking people now so universally take in the study of educational questions than the success of these meetings. The membership of the School of Ethics is composed of persons of widely different pursuits, comprising merchants and other business men as well as men and women representing the

several professions. While of course a large number of those who attended the meetings of the Conference were teachers, it was very gratifying to note that many persons not teachers were present at each meeting. The topics considered were: The relations of the school to the labor problem (three lectures); industrial history as an element of historical study; the ethical element in physical training; organic education; education movements in Europe in relation to social and political movements; the school as an ethical instrument; the ethical element in the kindergarten. The nature of these topics was determined by the fact that the School of Ethics this year in all its departments gave special attention to the labor problem, and hence the discussions of the educational conference were related to the general theme. The interest in these questions was marked at the outset and was sustained throughout the week. The audiences increased in size from session to session, and the evening discussions which followed the lectures were animated and were participated in by a considerable number of persons on each occasion. The importance of a careful consideration of the relations of the school to ethical, social, and industrial questions by such audiences as assemble at the Summer School of Ethics, and the practical value of bringing these considerations home to professional and non-professional minds alike, are not likely to be overestimated. It is to be hoped that the educational conference will become a permanent feature of the Summer School of Ethics.

What is known as the Cook County Normal School *Envelope* is so excellent and so suggestive that information concerning it ought to be widely spread. It is issued each month under the editorship of Colonel Parker. It grew out of the necessity for fresh reading matter directly related to lessons in elementary science, geography, myth, and history. It enables teachers and students to follow in the concrete the efforts that Colonel Parker and his associates are making to solve the problems of concentration and correlation. It is made up of matter for actual and immediate use in the schoolroom, and the particular value of the reading lessons is found in their suggestiveness for oral, written, and object lessons, as well as for experiments and investigations. Subject-matter

for every one of the eight grades usually found in an elementary school is given in each number. A single *Envelope* costs thirty cents; and ten numbers, either consecutive or of a single issue, will be sent for $2.50. Application for the *Envelope* should be made to Colonel Parker at the Cook County Normal School, Englewood, Ill.

The translation—as the church historians would say—of Superintendent Jones from the educational see of Indianapolis to that of Cleveland, the resignation of Superintendent Fitzpatrick of Omaha, and the choice of Dr. A. P. Marble of Worcester, Mass., as Mr. Fitzpatrick's successor, are all events of more than merely local importance.

The choice of Mr. Jones to succeed Mr. Draper at Cleveland is the ideal one. It speaks volumes for the wisdom and single-mindedness of the appointing officer, and gives the country increased confidence in the working of the now celebrated Cleveland system of school administration. To Mr. Jones—to whom the honor came unsought—the event must be particularly gratifying; for it demonstrates that it is becoming worth while in this country to develop special skill and power in the office of school superintendent.

The action of Omaha in turning to Dr. Marble as a successor to Mr. Fitzpatrick is a sharp rebuke to that faction of Worcester politicians and malcontents which displaced him there last spring. Dr. Marble is at the height of his power as a superintendent, and will feel at home in so progressive and ambitious a city as Omaha.

Of Mr. Fitzpatrick's withdrawal from school work it is not possible to write without deep regret. The place that he had won for himself, and the estimate in which his work is held, are of the highest. Almost any post in the teaching profession seemed open to him, and his place in the country's educational gatherings will not be soon or easily filled. He carries with him to his new field of labor the cordial good wishes of his many friends throughout the United States.